



Place-Responsive Outdoor Education Pedagogy in
Singapore Secondary Schools: A Case Study

A thesis submitted for the degree of Doctor of Philosophy

Kim Seng Tay

2018

School of Physical Education, Sports and Exercise Sciences

Te Kura Para-Whakawai

Abstract

Outdoor education in Singapore is gaining traction with recent policy changes emanating from the Government's National Outdoor Education Masterplan. Concerningly, a lack of critical examination and review of the policy and provision have resulted in schools adopting 'imported' pedagogical theories and practices that may not be relevant in the Singaporean context. This research project aimed to transform the thinking about dominant Singaporean practice with the over-emphasis placed upon the mastery of outdoor skills and the promotion of personal and social development. As an alternative, the adoption of a sustainable, place-responsive pedagogy to embrace not only personal development but also the social, cultural, historical and ecological aspects of local landscapes, places, and communities is explored. In this way, a more balanced and broader outdoor education curriculum is developed that embraces the development of the individual entwined with education for a sustainable ecological future. Hence, a broader range of contemporary cross-curricular goals are achievable.

Case study and participatory action research are employed as methodologies and structuration theory by Giddens (1984) provides the theoretical framework for the qualitative data analysis and interpretation. The project centres around two case study schools and their staff and students in interaction with government education facilitators. The Phase One (pre-project adoption phase) outcomes confirm the dominant thinking in adventure-based programming of the teacher-collaborators. They focused on adventure's role in building resilience, 'character', social-emotional outcomes and 21st century competencies and values in their students. The adoption of the place-responsive approach has resulted in a change in the teacher-collaborators' conception of outdoor education to include other aspects of learning beyond adventure-based activities. The Phase Two findings (project adoption phase) revealed the values of a place-responsive approach in achieving wider learning objectives for personal development, the development of student and teacher agency and the fostering of teacher to student and student to student relationships. Enabling factors to the successful adoption of the place-responsive programme included: (a) a conducive school culture that actively encouraged outdoor learning, (b) a supportive and trusting school leadership, (c) committed and competent

outdoor education teachers, and (d) effective allocation of resources. The disablers included: (a) teacher-collaborators' limited knowledge and teaching experiences in place-responsive pedagogy, (b) uncommitted form class teachers, (c) unreliable service providers engaged, and (d) inadequate allocation of time for students to immerse in the place experiences.

By anchoring learning through authentic settings and real world situations in the outdoors, the students and teachers were able to learn, connect and respond to their places and communities and engage in the ecological issues therein. This study shows how outdoor adventure and place-responsive pedagogies can be integrated. Together they form a sustainable pedagogy to develop the Ministry of Education's desired student learning outcomes of confident people, self-directed learners, concerned citizens and active contributors.

Acknowledgements

There are many people who I would like to thank for their contribution to this thesis. First and foremost, I would like to thank my wife, Eileen, for always supporting and helping me throughout the long process of this research project.

I am indebted to all the teacher research-collaborators in the two case study schools who contributed significantly to the research project. This research project would not have been possible without their active collaboration.

I thank my many friends and colleagues who have encouraged me along this long journey. Huge thanks also to the many staff at the School of Physical Education and Exercise Science at the University of Otago who have helped me. In addition, I am grateful to Dr Mike Brown, my previous supervisor from the University of Waikato for mentoring me for the first part of this thesis.

Finally, I would like to reserve my deepest appreciation and gratitude to my primary supervisor, A/P Mike Boyes, who has been the most amazing and nurturing mentor I have ever encountered. I am indebted to him for all the support, time and tremendous efforts put into helping me with my study without whom this thesis would not have materialised.

Table of Contents

.....	i
Abstract.....	iii
Acknowledgements	v
List of Acronyms Used in the Thesis	xv
Chapter One: Introduction	1
Background to Study	1
Purpose of Study.....	4
Significance of Study.....	5
My Personal and Professional Journey.....	6
Navigating this Thesis	8
Definition of Key Terms.....	12
Chapter Two: Education Policies, Curriculum Development and Implementation of Outdoor Education in Singapore	17
Introduction	17
Education Policies and Reforms in Singapore	17
Main Forces Influencing Changes in Education and Curriculum Policies in Singapore	26
Curriculum Planning and Construction in Singapore schools.....	28
Development of Outdoor Education in Singapore schools	29
<i>Outward Bound Singapore and Outdoor Education</i>	30
<i>Training and Professional Development of Outdoor Educators</i>	31
<i>Role of Outdoor Education in Singapore Schools</i>	32
<i>Outdoor Education Curriculum and Co-Curriculum in Singapore Schools</i>	33
Recent Policy and Curricular Changes in Outdoor Education	36
School-based Curriculum Development in Outdoor Education	41
Issues with Policy and Curriculum Changes in Outdoor Education	43

Policies and Curriculum Renewal in Outdoor Education in Singapore - Are We Ready?.....	45
Summary	46
Chapter Three: Outdoor Education in Singapore Schools	48
Introduction	48
Issues of Outdoor Education Practices in Singapore	49
I. Imperialism, Militarism and Other Historical Influences of Outdoor Education in Singapore	49
‘Character building’ in Outdoor Education.....	50
Activity-focused Practice in Outdoor Education	52
II. Risk, Challenge and Comfort Zone.....	56
<i>Risk and Challenge</i>	56
<i>Comfort Zone Model</i>	59
III. Commodification of Outdoor Education: Influence of Consumerism and Use of Modern Technology	60
IV. Beliefs and Practices of Education for Sustainability in Outdoor Education	63
V. Inadequate Professional Development of Teachers in Outdoor Education ..	66
VI. Shortage of Outdoor Education Research in Singapore.....	68
The Future of Outdoor Education in Singapore.....	69
Place-Responsive Outdoor Education as an Alternative Pedagogy.....	70
Place as a Concept.....	70
Place-Based Education and Place-Responsive Pedagogy.....	72
Potential Role of Place-Responsive Pedagogy in Achieving the Three Broad Goals of Outdoor Education.....	75
Place-Responsive Pedagogy and Outdoor Adventure Activities	78
Summary	79

Chapter Four: Methodology	81
Introduction	81
Structuration Theory as a Theoretical Interpretive Framework	81
Structuration Theory.....	83
Duality of Structure	83
Elements of Structuration Theory.....	84
Human Agency	84
Knowledgeability and Levels of Consciousness	85
Structure.....	89
Rules and Resources	90
Power	91
<i>Dimensions of the Duality of structure</i>	92
Criticisms of Structuration Theory	94
Change in Teachers' Knowledge, Beliefs and Practices	95
Summary of Giddens' Structuration Theory and Applications	101
Implications of Structuration Theory for this Thesis.....	103
Research Philosophy.....	104
Interpretive Perspectives in Education Research.....	105
Interpretive Paradigms.....	105
Axiological Beliefs	106
Ontological, Epistemological and Methodological Beliefs	107
Strategy of Inquiry: Case Study.....	108
Participatory Action Research	111
Chapter Five: Research Setting, Designs and Methods.....	113
Introduction	113
Research Setting	113
Case Study One: Base Secondary School (BSS).....	115

Outdoor Education in BSS	116
The Teacher-Collaborators in BSS	116
Case Study Two: Crest Secondary School (CSS)	119
Outdoor Education in CSS	119
The Teacher-Collaborators in CSS	120
Sampling Strategy	122
Designs and Methods	123
Professional Development	124
Data Collection Design and Methods in Phase Two.....	126
<i>Semi-Structured Interviews</i>	126
<i>Focus Group Discussions</i>	126
<i>Participant Observation</i>	127
<i>Document Collection</i>	128
Ethics.....	128
Data Analysis Methods	128
Reliability, Validity, and Triangulation of Data	130
Reflexivity.....	131
Limitations of Study.....	132
Chapter Six: Exploring the Context of the Case Study Schools	134
Introduction	134
Discovering the themes	134
Case Study One: Base Secondary School (BSS)	135
The Value of a Supportive Environment	135
The BSS Teacher-Collaborators Sources of Outdoor Education Knowledge	137
Beliefs of the BSS Teacher-Collaborators in Outdoor Education	142
Practices of BSS Teacher-Collaborators in Outdoor Education	151
Summary	154

Case Study Two: Crest Secondary School (CSS)	154
The CSS Environment	154
The CSS Teacher-Collaborators Sources of Outdoor Education	155
Knowledge.....	155
Beliefs of the CSS Teacher-Collaborators in Outdoor Education.....	161
Outdoor education is beneficial to students’ personal, social and life skills development	161
Outdoor education is more than adventure activities	161
School has sufficient outdoor education programmes.....	162
Need to narrow down the programme and make it more in-depth.....	163
Overseas locations more suitable for adventure-based programmes.....	165
Practices of CSS Teacher-Collaborators in Outdoor Education.....	166
Major programmes are conducted overseas	166
Major programmes are outsourced to service providers	167
Focus on adventure activities and values inculcation in practice.....	167
Subject-based outdoor learning	168
Place-based learning programme in school.....	169
Summary of CSS Case Study	170
Chapter Seven: Teachers’ Perspectives on the Design and Implementation of Place- Responsive Outdoor Education	171
Introduction	171
Case Study 1: Place-Responsive Outdoor Education Pedagogy in BSS.....	172
Perspectives of teacher-collaborators of the design and implementation of the place-responsive outdoor education programme	173
Emerging Themes.....	180
A. Development of Student Agency.....	180
B. Enhanced Teacher Agency	184
C. Relationship Building.....	187
D. Changing Knowledge(s), Beliefs and Practices	188
Summary of Findings from BSS Case Study	198

Case Study 2: Place-Responsive Outdoor Education Pedagogy in CSS.....	198
Perspectives of Teacher-Collaborators in the Design and Implementation of the Place-Responsive Programme.....	202
Emerging Themes	205
A. Creating authenticity in the project work design for students.....	205
B. Opportunities to learn from the place, people and their lifestyles	207
C. Relationship-Building	209
D. Changing Knowledge(s), Beliefs and Practices	210
Summary of Findings from the CSS Case Study	216
Chapter Eight: Place-Responsive Approach as an Alternative Outdoor Education Pedagogy	217
Introduction	217
Case Study 1: Place-Responsive Pedagogy in BSS	217
Enablers and barriers to the design and implementation of place-responsive outdoor education pedagogy	217
Support and trust of school leaders	218
School culture.....	220
Competency and agency of the teacher-collaborators	221
Limited knowledge and experience in a place-responsive approach.....	222
Managing the involvement of the uncommitted Form class teachers.....	223
Ineffective facilitators provided by private outdoor service provider.....	225
Inadequate allocation of time for the place-responsive experience	226
Viability of the adoption of the place-responsive approach.....	226
Place-responsive approach is a complementary pedagogy for the achievement of the desired student learning outcomes.	227
Ease of design and implementation of a place-responsive approach in outdoor education	230
Issues in adopting a place-responsive approach in outdoor education	231
Summary	234
Case Study 2: Place-Responsive Pedagogy in CSS	235

Enablers and barriers to the design and implementation of place-responsive outdoor education pedagogy.....	235
Trust and support of school leaders	235
School culture	235
Cross department collaboration	236
Resources support – authoritative and allocative resources	236
<i>Reliable overseas service provider to support the adoption of the place-responsive approach.....</i>	<i>236</i>
Inability to speak the foreign language overseas.....	237
Inadequate allocation of time for the place-responsive experience.....	239
Viability of adoption of place-responsive pedagogy in outdoor education.....	239
Place-responsive learning is a complementary approach for the achievement of the desired student learning outcomes	240
Ease of implementation of the place-responsive approach	241
Issues in adopting a place-responsive approach in outdoor education	242
Need to involve the other teachers in the design of the place-responsive approach.....	242
<i>Safety considerations in some outdoor adventure activities may affect the place-responsive learning.....</i>	<i>243</i>
<i>Interaction with local villagers for place-responsive learning</i>	<i>244</i>
Summary.....	245
Cross Case Analysis	245
Chapter Nine: Towards Sustainable Outdoor Education Pedagogies – The Role of a Place-Responsive Approach	247
Introduction	247
Implications of findings.....	248

I. Pedagogical knowledge acquisition	248
II. Dominant thinking and practice of adventure-based programming....	249
III. Changes in knowledge, beliefs and practices of teacher-collaborators.	251
IV. Gaps in knowledge of place-based learning.....	252
V. Professional development and training of outdoor educators	253
VI. Enablers and barriers to more sustainable outdoor education approaches.....	254
VII. Positioning of outdoor education in the PE curriculum.....	255
Place-responsive pedagogy as a sustainable approach.....	256
Values of a place-responsive pedagogy	256
How may a place-responsive outdoor education pedagogy be adopted in other schools?	258
Need for recalibration of outdoor education practice in Singapore	261
Reflections on the Theoretical Framework and Methodology.....	263
Reflections on the use of Structuration Theory as a Theoretical Framework	263
Reflections on Methodology – Case study and participatory action research	265
Reflections on the Research Project.....	266
Implications for Future Research	267
Concluding Comments.....	268
References	271
Appendices.....	301
Appendix A: Information Sheet	301
Appendix B: Informed Consent	303
Appendix C: Interview/Focus Group Discussion Questions For Phase One of Research Project.....	305
Appendix D: Professional Development Workshop Schedule	307
Appendix E: Interview Questions for Phase Two.....	308

Table of Figures

<i>Figure 1. Current Practices of Outdoor Education in Singapore (adapted from Higgins & Loynes, 2007)</i>	13
<i>Figure 2. 21st Century Competencies Framework (MOE, 2015)</i>	25
<i>Figure 3. Outdoor Education in PE Framework (Ho, et al., 2015)</i>	38
<i>Figure 4. Outdoor provision for all students</i>	41
<i>Figure 5. Levels of Consciousness (Giddens, 1984, p. 7)</i>	87
<i>Figure 6. Dimensions of the Duality of Structure (Giddens, 1984, p. 29)</i>	92
<i>Figure 7. Levels of Change (Sparkes, 1990, p. 4)</i>	97
<i>Figure 8. Fullan's Change Process (Fullan, 2007, p. 66)</i>	99
<i>Figure 9. Dynamics & duality of structuration (Burridge et al., 2010, p. 26)</i>	102
<i>Figure 10. Constant Comparative Method of Data Analysis (Maykut & Morehouse, 1994)</i>	129

List of Acronyms Used in the Thesis

Base Secondary School	BSS
Crest Secondary School	CSS
Ministry of Education Singapore	MOE
Ministry of Defence Singapore	MINDEF
National Cadet Corps	NCC
National Institute of Education	NIE
National Police Cadet Corps	NPCC
Outdoor Adventure Learning Centre	OALC
Outward Bound School Singapore	OBS
People's Association	PA
Physical Education & Sport Teachers Academy	PESTA
Physical, Sports & Outdoor Education Branch	PSOEB
Primary Education Review & Implementation Committee	PERI
Programme for Active Learning	PAL
Risk Assessment & Management System	RAMS
Secondary Education Review & Implementation Committee	SERI
Singapore Physical Education Association	SPEA
Student Development Curriculum Division	SDCD
Teach Less Learn More Initiative	TLLM
Thinking Schools, Learning Nation Vision	TSLN
Trim and Fit Programme	TAF

Chapter One: Introduction

Background to Study

Outdoor education is in the midst of a major change in Singapore. From its long held status as a non-formalised curriculum to sitting on the fringe of the formalised curriculum as a co-curricular entity (Ho, 2011), it has evolved to be a part of the formalised physical education curriculum in Singapore schools from 2014 onwards (Atencio & Tan, 2016). Additionally, it is now offered as an area that all secondary schools can include in the funded ‘Learning for Life’ Programme implemented for students since 2016. Finally, the National Outdoor Education Masterplan, a government initiative was announced in Parliament by the Minister of Finance in 2016. These changes in the status of outdoor education are set in the larger context of a major shift in the education paradigm in Singapore recently. After undergoing three strategic phases, the education system is embarking upon a new stage towards a student-centric, values-driven education (Heng, 2012). Then Minister of Education, Heng Swee Keat, describes the core of a student-centric, values-driven education as such (Heng, 2013):

To create opportunities for Singaporeans in the future, we have to address the demands of the future - and these demands are not merely economic. For a strong social fabric of trust and togetherness, our young must care for one another, and be committed to our collective future. Ultimately, education is not what we do to our children. Rather, it is what we do with them, and for them, to bring out the best in each of them, so that they grow up to embrace the best of the human spirit - to strive to be better, to build deeper wells of character, and to contribute to society.

An immediate outcome of this strategic change in direction is the creation of a ‘total curriculum’ that reinforces the importance of a balance between both the academic and non-academic domains for the holistic development of our students. This could

well represent a paradigm shift as some of the non-academic domains such as aesthetics, sports and outdoor education that have previously been regarded as co-curricular activities are now considered by the Ministry of Education (MOE) as core curriculum domains. The formation of a new Student Development Curriculum Division (SDCD) by the MOE in 2011 to oversee the development of character and citizen education, arts, sports and outdoor education as part of the total curriculum is testimony of the greater emphasis in these domains.

This curriculum renewal period offered the prospects of increased provision of outdoor education. In fact, this has already been realised through its inclusion at all three levels of schooling: primary, secondary and junior college. At the primary level, it is included as one of the four mandatory modules under the Programme for Active Learning initiative within the curriculum for all primary one and two pupils since 2010. It is also added as a module under the physical education curriculum in phases across all levels from primary to junior college with effect from 2014. However, the prospects for increased outdoor education begged the important question of: “Are we ready?” I will argue in this study, based on my professional experience, literature review, and research in outdoor education in Singapore, that there are several major issues that may hamper the progress of outdoor education within the renewed curriculum. These issues include:

- i. an over emphasis on outdoor adventure pursuits and personal development due to historical influences;
- ii. unexamined concepts from ‘imported’ pedagogy of ‘adventure programming’ (see for example: Luckner & Nadler, 1997; Miles & Priest, 1999);
- iii. the pervasive culture of consumerism in Singapore (B. H. Chua, 1998) impacting on outdoor education practice;
- iv. the lack of education for sustainability in outdoor education;
- v. the lack of professional development in alternative outdoor education pedagogies for outdoor educators/physical educators; and
- vi. an acute shortage of research in outdoor education in Singapore.

Outdoor education in Singapore schools has increasingly gained traction as a vehicle for promoting holistic learning in students (Y. S. M. Tan & Atencio, 2016). According to Y. S. M. Tan and Atencio (2016), holistic learning in this case refers to “learning within disciplinary subjects to foster pupils’ cognitive development, as well as a more expansive development of 21st Century skills that necessarily places emphasis on citizenship and character education” (p. 25). The 21st Century skills and citizenship and character education espoused by the MOE are articulated in the 21st Century Competencies Framework (Ministry of Education, 2014, 2015). This Framework aims to develop a sense of collective identity, civic literacy, cross cultural understanding, global awareness, and ultimately, contributing to the development of self-directed learners, confident and concerned citizens, and active contributors (see Chapter Two). However, I contend that outdoor educators in Singapore need to first overcome the challenges highlighted earlier in order to achieve the desired learning outcomes for the students. A potential solution is through research on alternative critical outdoor education pedagogies that could better inform practice. I believe that a critical action-oriented research on place-responsive pedagogy through the study of place with its social, cultural, historical, and ecological contexts has the potential to bridge the arguably fragmented provision and under-realisation of deeply embedded and connected learning experiences in our current practice (See Chapter Three for a more detailed discussion on place-responsive pedagogy). Moreover, I will argue that the three important broad educational outcomes desired in outdoor education for our students could potentially be achieved through embracing a place-responsive pedagogy. These three broad goals are:

- a. to be rugged and resilient;
- b. to stay rooted to Singapore by developing a sense of collective identity through civic literacy and citizenship and character education; and
- c. to be culturally competent and contributing global citizens who will do their part in solving global problems such as climate change, poverty, inequality and related issues.

Purpose of Study

The purpose of this case study of two secondary schools in Singapore is to examine how a place-responsive pedagogy is implemented in the outdoor education programmes of these schools using a participatory research approach. The project with the two schools comprises two phases. The first phase is an exploratory qualitative inquiry to determine the prevailing knowledge, beliefs and practices of the teachers in the two schools in place-responsive pedagogy in outdoor education. Data gathered following the initial individual interviews and focus group discussions is used to guide the design of the professional development of the participants in the place-responsive pedagogy in outdoor education programme to be implemented. The intent was to employ the participatory research methods following this professional development to enable the participants to collaborate with the researcher to co-design and implement the outdoor education programme.

The aims of the two-phase study are guided by the following research questions:

Phase One

1. What are the prevailing knowledge, beliefs, and practices of the teachers of outdoor education in the two case study schools in Singapore?

Phase Two

2. What were the teachers' perspectives of designing and implementing a place-responsive approach?
3. How did the implementation of place-responsive outdoor education pedagogy impact on the teachers' knowledge, beliefs, and practices?
4. What are the enablers and barriers that affected their implementation of place-responsive outdoor education?
5. Does a place-responsive approach offer a viable and practical alternative to current modes of outdoor education delivery in Singapore?

Significance of Study

The lack of critical examination and review of MOE policy and professional development provision in outdoor education has, not surprisingly, resulted in schools adopting ‘imported’ pedagogical theories and practices that may not be relevant in the Singaporean context. The dominant forms of outdoor education practice focus on mandatory camping experiences in designated remote sites that are situated away from the city centre, and adventure-based high risk activities (Atencio, Tan, Ho, & Chew, 2014, 2015; Ho, 2011, 2013; Y. S. M. Tan & Atencio, 2016). An undesirable effect, in my opinion, is a lack of interest and exploration on teaching about natural and urban places other than them serving as a mere backdrop for the conduct of outdoor activities. This is similar to the observation by Wattoo and Brown (2011) in Australia and New Zealand where:

Many of the contemporary assumptions, ideals and practices of outdoor and experiential education may actually be silencing or denying the experience of place for participants. This may result in the potential loss of a more holistic educational experience as the local communities and their histories and the local ecologies are ignored (p. 51).

I support the notion that a place-responsive approach that takes into account cultural, social and geographical spaces and issues is essential for a more holistic educational experience for the students. I posit that this approach could potentially reach out to wider segment of youths who may not subscribe to the perpetuation of hegemonic views of masculinity often associated with rugged individualism, physical strength and competitiveness in many of the outdoor adventure activities in UK and North America (Humberstone, 2000; Lugg, 2004) that is similarly found in Singapore. This has resulted in the quick and convenient use of artificial structures such as climbing walls and challenge rope courses for personal and social development, and ‘character building’ of the students by many schools as seen in all four MOE Outdoor Adventure Learning Centres (OALC). A consequence of this approach is the lack of exploration of alternative ways of teaching and learning through outdoor education.

No research has been done on the adoption of place-responsive outdoor education pedagogy in Singaporean schools to-date. Hence, this study aims to bridge the theory-practice divide in two ways. Firstly, a critical examination of the assumptions and beliefs of the outdoor educators in their selection and delivery of the outdoor education programme will be conducted. Secondly, a transformation of existing practice with the design and implementation of a place-responsive outdoor education will be effected. This study seeks to transform the thinking about the dominant practice of Singaporean outdoor education focusing predominantly on mastery of skills and personal and social development to include a more holistic pedagogy of outdoor education that embraces both the social, cultural, historical and ecological aspects of local landscapes and places. The ultimate aim of this study is to develop a practice of outdoor education inclusive of education for sustainability through place-responsive learning.

My Personal and Professional Journey

In order to contextualise my worldview and interest in this study, I will provide a brief description of my personal and professional life journey as an outdoor educator to frame the context leading to why I am interested in the pedagogy of place in outdoor learning. I will describe two critical incidents in my life that have shaped my beliefs and value in education in general and outdoor education in particular.

The first critical incident took place in my early childhood. Becoming an orphan at the age of six in a family of ten siblings, and subsequently living with my aunt and uncle and their four children in a cramped two-bedroom public flat, my siblings and I were practically forced to spend vast amount of time outdoors. Relatively cost-free forms of outdoor activities became a favourite past time which enable me to become intimate with the places around the neighbourhood where we lived and played in. My love and passion for the outdoors and sports grew with the time I spent outside. Thus, I was introduced to the outdoors as a young child initially not by choice but for pragmatic reasons. Nonetheless, the long period of time engaging in sports and outdoor activities has enabled me to begin my teaching career as a physical education and outdoor education teacher in a junior college (pre-university)

in 1988. During my 14 years stint in the college, I was given responsibility for organising outdoor education modules in the physical education curriculum, school camps, overseas canoeing, sailing, trekking, and service-learning expeditions. A key turning point in my practice took place in June 1990 when I was seconded by the MOE to the Peoples' Association (PA), a statutory board, for two and half years from June 1990. I was a member of a pioneer team of seven management staff tasked to plan for the handing over of the management of Outward Bound School, Singapore (OBS) by the Ministry of Defence (MINDEF) to the PA. I was involved in the recruitment and training of the new team of instructors and was placed in charge of their professional development following the successful handing over of OBS. As an OBS trainer, I was fortunate to be given the opportunity to instruct in all types of outdoor education courses with a wide spectrum of participants from different backgrounds. This was an experience which I could not have obtained in school alone. This secondment helped to further my interest in the professional development of outdoor educators. Another personal milestone was reached when I was posted to the MOE Outdoor Education Section in 2003 and became its Head cum Senior Specialist for nine years prior to my sabbatical leave from the MOE to undertake this doctoral study at end 2011. I resumed full-time work with the MOE Outdoor Education Section as a Senior Specialist in end 2014 whilst pursuing this research study on a part-time basis. Thus, much of whom I am today is influenced significantly by my childhood experiences in the outdoors as well as my professional career.

The second critical incident that has shaped my view of equity and social injustice issues took place in my early primary school years. Growing up poor also meant that I had to forgo pre-school education, thus starting my primary schooling at a relatively lower literacy and numeracy skill levels than many of my peers. I recalled having to skip classes in my early primary school years several times especially during the beginning of the calendar month when the class teacher had to collect the monthly school supplementary fee that my family could not afford to pay on time. I took to absenting myself from school without the knowledge of my family members when the situation became too embarrassing as I was chided regularly for 'forgetting' to bring my school fees when, in reality, there was no money to pay on time. This school fee episode left a deep impression on me, and shape my

worldview informed by what I understood to be ‘critical theory’ in my adult years. I developed an interest in issues of social injustice and poverty and subscribe to Freire’s (1972) notion that the purpose of education is to foster a critical consciousness as part of the attempt to reveal structural and systemic inequality and to act on these injustices.

For this research study, I am also aware of the dual roles I played as a researcher and a MOE curriculum specialist that may affect the way I am being perceived by my research participants, some of whom have attended previous professional development sessions that I have conducted for the MOE. The power relations between the participants and I may appear unequal based on my senior position in the MOE but I will take the necessary measures to minimise this. These measures are highlighted in Chapter Five.

Navigating this Thesis

In this introductory chapter, I described my professional observations and perceptions of the potential as well as limitations of the current practice of outdoor education in Singapore schools. I highlighted the purpose and the significance of this research study and outlined the specific research questions that framed this thesis. I have also described my personal and professional journey from being an outdoor enthusiast to my current status as a practitioner and researcher in outdoor education in order to inform the reader of how I perceive the world in my practice as an outdoor educator.

In Chapter Two, I will review the education policies and curriculum development in Singapore that shaped how and what education is formulated and enacted in schools. The political, economic, social and cultural factors that influence education policies are described to set the context in which the structure and form of outdoor education in Singapore schools are developed. The historical development of outdoor education in Singapore schools is reviewed to compare and contrast its role over the years. I argue that the recent major curriculum renewal provides potential opportunities for outdoor education to play a more significant role in the holistic development of students. However, there is a need for outdoor educators to re-

examine the relevance of their current practice in meeting the aims of the new total curriculum in Singapore. I will identify various issues that may curtail further development of outdoor education.

In Chapter Three, I will review the current practice of outdoor education in Singapore schools and highlight the various issues that may potentially side-track our aims to develop the students holistically. These issues include:

- a. the historical influences of imperialism and militarism with focus on individualism, traditional adventure pursuits and character building;
- b. imported pedagogy based on unexamined concepts in ‘adventure programming’ such as risks, challenge by choice, and comfort zone model;
- c. commodification and marketization of outdoor education due to the influence of the predominant consumerism culture and modern technology, lack of education for sustainability;
- d. inadequate professional development of outdoor educators,
- e. shortage of research in outdoor education.

I will also highlight my findings based on a review of the literature on contemporary practice of outdoor education locally and internationally as well as place-based approaches in education. Thereafter, I will argue for the potential of a place-responsive pedagogy in outdoor education to meet the desired learning outcomes in terms of the three broad education goals identified for our students in Singapore schools.

Chapter Four will describe the methodology adopted in this study. I started with a description of the theoretical interpretive framework that I have adopted to aid in the analysis of the data collected in this study. The duality of structure and elements of Giddens’ structuration theory (Giddens, 1979, 1984) are examined to evaluate their potential application to the research project. In order to answer the research questions posed for this study, an exploration of the nature of human action and social structures that underpinned the teachers’ practices is required. Specifically,

the aim is to use structuration theory to examine the influence of, and relationships between the objective and subjective elements which influence the teachers' knowledge, beliefs and practices in outdoor education and the social institutions they are operating in. Moreover, exploring social practices such as the design and implementation of place-responsive pedagogy by the teachers in this case requires an understanding of the relationships between the human actors (teachers, administrators, and researcher) and social structures (for example; schools, resources, places of learning). It also involves understanding how the actions of the teachers produce and reproduce the school's norms, rules and culture and how these norms, rules and culture influence the practice of the teachers in turn. The use of structuration theory, thus, provides a theoretical framework to aid in the data analysis and interpretation of this research project. The next section describes my philosophical assumptions which are embedded within the theoretical interpretive framework that I use for this research project. I will detail the philosophical assumptions comprising the four categories of axiology, epistemology, ontology and methodology (Denzin & Lincoln, 2005, 2011). This is followed by a description of the multiple case study as a main strategy of inquiry. I also describe briefly the participatory action research it is adopted in phase two the project.

Chapter Five describes the research setting, designs and methods employed in the study. An outline of the sampling strategy in the selection of the schools and the teacher-participants for the research project is provided. The designs and methods used are conceptualised in two phases. The first phase is an exploratory qualitative inquiry to determine the prevailing knowledge, beliefs, and practices of the teacher-participants in the two case study schools. This is done using the semi-structured interviews and focus group discussions methods. A professional development workshop on a place-responsive pedagogy in outdoor education was completed in collaboration with the participants following the initial interview and focus group discussions. The professional development of the team in building upon our knowledges, beliefs, and practices of the pedagogy is an on-going process throughout the research project. The second phase comprises the design and implementation of the pedagogy in the outdoor education programmes for the school and the data collection using interviews, focus group discussions, participant observations, and review of the school documents. The data analysis method is

described. Finally, I will highlight my reflexivity during the study and the limitations of this study.

Chapter Six aims to address the answers to the first research question. It presents the findings of phase one of the research study. An examination of the prevailing knowledge, beliefs and practices of the teachers of outdoor education in the two case study schools prior to the adoption of a place-responsive pedagogy is conducted. The information was collected through semi-structured individual interviews and focus group discussions conducted in October 2012, as well as materials and publications such as newsletters and camp booklets from the two schools.

Chapter Seven presents the data analysis of phase two of the project which examines the teacher-collaborators' perspectives following the design and implementation of the place-responsive pedagogy in the outdoor education programme. Specifically, this chapter addresses the second and third research questions which are on the teachers' perspectives of designing and implementing a place-responsive approach and how its implementation impacted on the teachers' knowledge, beliefs, and practices. The data was collected through field observations, semi-structured individual interviews and focus group discussions between April to August 2013, as well as materials and publications from the two schools. The materials included the camp programme booklets, outdoor education programmes and newsletters. Nine teacher-collaborators in Base Secondary School (pseudonym) and four teacher-collaborators in Crest Secondary School (pseudonym) were interviewed in this phase.

Chapter Eight concludes the presentation of the data analysis of phase two of the project. It examines the enablers and barriers that the teacher-collaborators in the two case study schools encountered in their design and implementation of a place-responsive outdoor education programme. It also explores the viability of the place-responsive approach as an alternative mode of outdoor education delivery based on the experiences of the teacher-collaborators in the case study. Specifically, the data analysis aims to address the remaining two research questions in the study.

Finally, Chapter Nine concludes this thesis by examining the implications of the findings in relations to the existing practice of outdoor education in Singapore schools. Specifically, it explores the theoretical, practical and policy implications of the findings for outdoor educators, schools and policy-makers. It discusses the value and viability of a place-responsive pedagogy in the current outdoor education curriculum in schools in light of the findings. A set of design principles derived from the experiences of the teacher-collaborators is proposed for other schools interested in adopting the pedagogy in their programme. As part of my reflexivity, I review my research process and journey, theoretical framework, and methodology employed. Lastly, I discuss the potential research that could be conducted for the future development in outdoor education in local schools.

Definition of Key Terms

As terms and definitions may be used and understood across different cultural, geographical, historical and social contexts, the following key terms and definitions are applied specifically in the case of this study for clarity:

Outdoor Education

According to Higgins and Loynes (1997), the creation of a distinct body of knowledge in outdoor education in the United Kingdom (UK) has recently led to the common view that it comprises the three main areas: outdoor adventure activities, environmental education, as well as personal and social development. Outdoor adventure activities are used in outdoor education both for physical skill development as well as for personal and intra-personal development. Whilst the provision of adventure experiences is concerned with personal and interpersonal growth and development, environmental education in outdoor education is concerned with educating people about the relationships of humans to the natural world (Priest, 1999; Priest & Gass, 2005).

Outdoor education in Singapore can take different forms - residential adventure camps, expedition programmes, leadership development programmes, personal and social development courses, nature based field trips, and outdoor environmental projects. It is also included in the formal curriculum as a module in the Programme

for Active Learning (PAL) and physical education syllabus. The definition of outdoor education by Higgins and Loynes (1997) is adapted in this study (see Figure 1) as it closely describes the prevailing practice in Singapore based upon my professional observation as a teacher-trainer of outdoor education in the MOE in the last ten years. The component of environmental education and/or education for sustainability (Allison, Carr, & Meldrum, 2012) is depicted as a smaller circle relative to the other two components as it is seldom emphasised as the main purpose of outdoor education in Singapore based on the objectives listed in their programmes by schools using the MOE Adventure Centres.

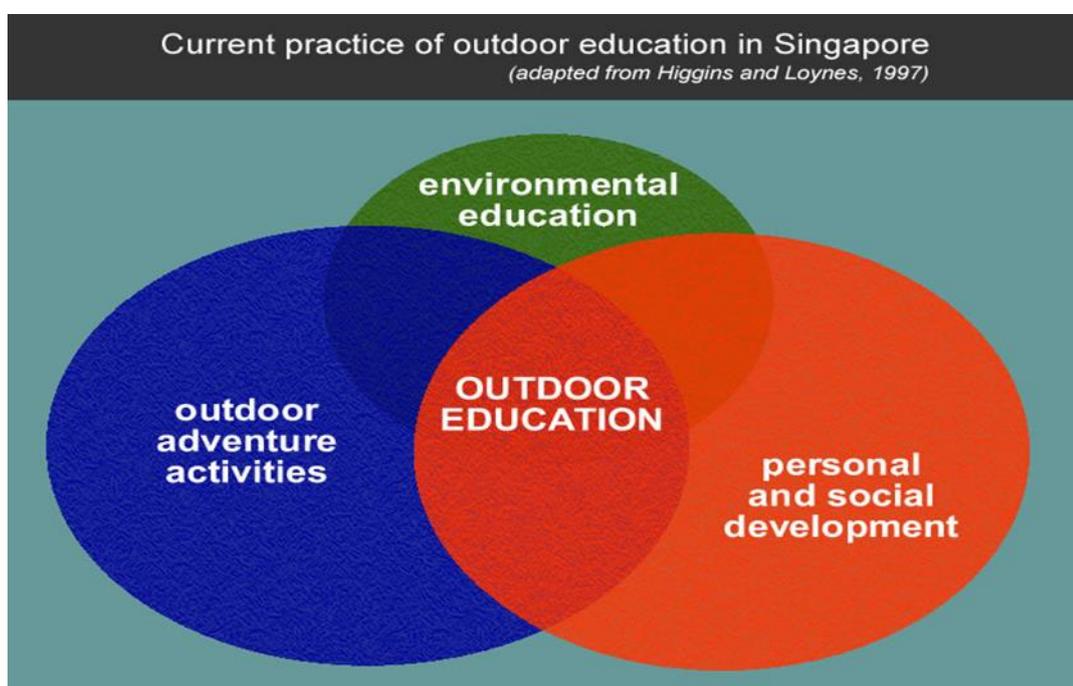


Figure 1. Current Practices of Outdoor Education in Singapore (adapted from Higgins & Loynes, 2007)

According to Ferreira (2009), there have also been considerable debates over the definitions of environmental education, education for the environment and education for sustainable development or sustainability. Many environmental education scholars have shifted their focus from environmental education to education for sustainability in light of the declaration of the United Nation Decade of Education for Sustainable Development (UNDES) in 2005 (Ferreira, 2009). This shift in focus towards the use of the term ‘education for sustainability’ is to

recognise that socio-cultural and economic well-being is as important as ecological well-being in bringing about a sustainable future (Hill, 2011). For the purpose of this study, the terms ‘environmental education’, ‘education for the environment’ and ‘education for sustainability’ will be used interchangeably as they denote the idea of empowerment of the individuals to transform social structures through education.

Place-responsive education versus place-based education

Sobel (2005) described place-based education as “the process of using the local community and environment as a starting point to teach concepts in language, arts, mathematics, social studies, science and other subjects across the curriculum” (p. 7). It emphasises hands-on, real world learning experiences and aims to enhance students’ appreciation of the natural world, develop ties with their community and creates a heightened commitment to serve as active and contributing citizens (Sobel, 2005).

Cameron (2003, p. 180) preferred the term place-responsive rather than place-based or place-conscious simply because the word ‘responsive’ carries an “impetus to act, to respond, not merely ‘to be sensitive to’ place”. Place-responsiveness also denotes an acknowledgement of a highly mobile people in modern societies who will experience multiple places whereas the term place-based carries some limiting connotations that education should occur within a certain radius from one’s place of residence (Brown, 2012a; Wattchow & Brown, 2011). Furthermore, it has been argued that while many residential outdoor centres may be ‘place-based’ and thus offered place-based programmes, they may not necessarily be place-responsive (Brown, 2012b). For this study, the term ‘place-responsive’ education proposed by Cameron (2003) is adopted over the more commonly used ‘place-based’ education to signify the potential of outdoor education to utilise a more place-responsive approach.

Singlish

This is localised form of spoken English used by many Singaporeans. It is a blend of Chinese dialects, Malay and English language that is unique to Singapore. English as a first language was initially introduced in Singapore schools in 1966 as

a strategy to engage with the global economy as well as to serve as an integration tools for the many Chinese dialects and Malay, Indian speakers among the multi-ethnic populace. Over time, spoken English became indigenised and adopted its own local character (Velayutham, 2007) In this study, all the participants used Singlish in their conversations and during the interviews. Thus, the statements recorded during the interviews and published in this study will reflect this Singlish characteristic.

Ministry of Education (MOE)

The Ministry of Education is a government body that oversee the formulation and implementation of national policies pertaining to education. It plays a significant role in shaping how policies are formulated and enacted given the centralised education system adopted in Singapore.

Student Development Curriculum Division (SDCD)

The Student Development Curriculum Division was set up in 2012 as part of the move towards a student-centric, values-driven education. It has four Branches that oversee the formulation, implementation, and review of policies and curriculum development related to Citizenship and Character Education (CCE), Physical Education, Sports Education, Outdoor Education, Arts Education, and Guidance and Pastoral Care for all local schools.

Physical, Sports & Outdoor Education Branch (PSOEB)

The Physical, Sports & Outdoor Education Branch (PSOEB) is a department under the SDCCD. Its main function is to oversee the formulation, implementation and

review of policies and curriculum development related to Sports Education, Physical Education and Outdoor Education for all local schools.

Outdoor Education Section

The Outdoor Education Section is a unit under PSOEB, MOE. It was formed in 1999 and have a strength of 10 curriculum officers and specialists in 2015.

Outward Bound Singapore (OBS)

Outward Bound Singapore was established in 1967 and is a part of the international affiliation of Outward Bound schools worldwide. In Singapore, OBS plays an important role in the provision of professional development courses for outdoor educators mainly in outdoor instructing and coaching skills.

Chapter Two: Education Policies, Curriculum Development and Implementation of Outdoor Education in Singapore

Introduction

In this chapter, I describe the changes in Singaporean education policy-making and curriculum development and how they are shaped by globalisation, cultural, economical, historical and political considerations to deliver the desired national goals. I will also highlight the influence and impact of these changes upon the ways outdoor education is taught and practiced in Singapore schools.

Public policy was exclusively developed within a national setting in the past but is now located within a global system (Rizvi & Lingard, 2010). This is because it is “affected significantly by the imperatives of the global economy, political relations and changing patterns of global communication that are transforming people’s sense of identity and belonging” (Rizvi & Lingard, 2010, p. 2). Similarly, global processes are currently transforming education policy around the world. It has been argued that “no contemporary macro analysis of education policy is possible without considering both the processes and impacts of globalisation” (Gopinathan, 2007, p. 53). Besides the extensive influence of globalisation, other inter-related social, cultural, economic, and political factors also significantly influenced how education policies are shaped in Singapore (Goh & Tan, 2009). The influence of globalisation in the forms of technological and telecommunications transfer, marketisation and commodification of education, and emergence of environmental and conservation consciousness, to name some examples, have impacted Singaporean outdoor education practice.

Education Policies and Reforms in Singapore

It is necessary here to outline some contextual features of the Singaporean education system and reforms to help in understanding why, how, and what national education policies are formulated. These have, in turn, largely shaped what and how

physical education and outdoor education are practised in Singapore. According to Rizvi and Lingard (2010), although policies are often assumed to exist in texts as a written document of some form, they can also be viewed as a process involved in the production of an actual text as well as its implementation and evaluation. Similarly, Ozga (2000) regards policy as a process rather than a product which involves negotiation, contestation or struggle between different groups of stakeholders who may be outside the formal machinery of official policy-making. Evans and Penney (1998) also reinforce the notion that policy should be regarded as a process that is protracted and ongoing; a complex series of political interaction involving those inside and outside government. A brief historical description of the development of the Singapore education system is provided here to gain an understanding of the political, social and cultural influences in education policy-making.

As described by C. Y. Tan (2013), the smallness of Singapore (710 square kilometres) with limited natural resources underpins many of the education policy decisions, particularly in its emphasis on talent as the most valuable resource. With a population of 5.61 million as at June 2016, Singapore is a highly urbanised and densely populated city state with an overall population of 7,797 people per square kilometres (Department of Statistics, 2017). Its small land size and close proximity to Malaysia and Indonesia made her vulnerable politically to external forces. Despite these constraints, Singapore achieved United Nations developed-country status in 1990. Singapore's only two key natural resources are its strategic location and skilful people (McNeill & Fry, 2010). It is, thus, driven by pragmatism to produce a competent, adaptive and productive workforce (Yip, 1997). This need for pragmatism drives policy-makers, educators and society at large to adopt an instrumentalist view of the purpose of education which they perceive as essential to its survival, growth and competitiveness in the global market (Hairon & Dimmock, 2012). A national goal of education is thus to equip the students as productive workers for their future workplace. Being a multi-ethnic society, education is also seen as crucial for building national identity and a citizenry with desirable attributes necessary to underpin the social and economic development that has enabled Singapore to move from a developing state to a First World state (Gopinathan, Wong, & Tang, 2008). Hence, it is no surprise that education is second

only to defence in the annual government budget allocation since its independence in 1965. The education expenditure in 2016 was S\$12.66 billion (Ministry of Finance, 2017).

The education system in Singapore is highly structured with centralised control by the MOE. This is especially so in policy and curriculum design and development (Sim & Print, 2009), though recently there is a move towards giving teachers and schools more autonomy in curricular decision-making (Hargreaves, 2012). At the primary, secondary and junior college (pre-university) levels, students go through a six-year, four- or five-year and two- or three-year courses respectively. Unlike some countries, Physical Education (PE) is a mandatory subject for all levels of students. The students are also encouraged to participate actively in Co-Curricular Activities (CCA - 'after-school's clubs) and Community Involvement Programme (CIP) as part of their holistic learning experiences.

The education system has undergone three strategic phases of educational reforms from the 1960s to 2000s with the fourth reform currently taking shape since 2010. These three phases were:

- a. survival-driven (1965-1978);
- b. efficiency-driven (1978-1997); and
- c. ability-driven (1997-2010) (Fry & McNeill, 2011).

Phase one: survival-driven (1965-1978)

The first survival-driven phase in the early years of independence was characterised by the aim to produce a critical mass of trained and efficient workers to feed the newly set up labour-intensive industries. Forced out of the Malaya Federation in 1965 to become a reluctant independent state, Singapore was poor and at the same time saddled with a rapidly rising birth rate with few prospects for survival (Gopinathan, 1996). Technical education was emphasised to educate students with the linguistic and technical skills for the workforce through the development of post-secondary technical and vocational institutes and polytechnics (Goh & Tan, 2009). Socially, Singapore was also divided along ethnic and religious lines. The

need for social cohesion and the establishment of a national identity was of paramount importance for social stability. Attempts to forge a common identity through schooling was made through the introduction of a common curriculum and locally-produced textbooks. Citizenship and moral education were also emphasised. To establish a common working language among the multi-ethnic population, the introduction of bilingualism in the education system was effected. English is adopted as the first language and the main medium of instruction in schools with the mother tongue of the three major ethnicities; Mandarin, Malay, and Tamil, adopted as the second language of study. Emphasis of PE, sports and outdoor adventure activities during the 'survival-driven' phase served two main aims. They were used for the development of physical fitness and ruggedness in preparation for compulsory national service (NS) for men, and to promote social cohesion by helping to bring the diverse ethnic groups together (Ho, 2013). As noted by Kunalan, Aplin, and Quek (2009) sport activities were rationalised on the basis of British public school values such as leadership, ruggedness and character-building during this phase.

Phase two: efficiency-driven (1978-1997)

The 'survival-driven' phase was followed by the second major review of the education system in 1977 which resulted in the publication of the Goh Keng Swee Report in 1979, more commonly known as the Goh Report. It arose from the finding that 20 to 30 percent of students were dropping out of the system as they could not cope with the learning of two languages, a result of the bilingualism policy. A problem with the system then was that it did not cater to pupils of different abilities and needs. The Goh Report recommended significant changes which marked the commencement of the efficiency-driven education system. It aimed to fine-tune the system to produce skilled workers for the economy in the most efficient way. This was done by the government projecting the manpower demands in various sectors of the economy and training people to fit into jobs in those sectors (Goh & Tan, 2009). Students were streamed into different courses at primary and secondary levels based primarily on the assessment of their level of language and mathematics abilities. The government worked on having 20 percent of each school cohort receive technical-vocational training at the Institute of Technical Education, 40

percent to receive polytechnic education, and the remaining 20 percent university education. According to Goh and Tan (2009), this showed that the development of education in Singapore is highly influenced by political, economic and social considerations.

The 'efficiency driven' phase corresponded to the increase in the national obesity rate as a result of affluence and lifestyle changes. Two ex-Prime Ministers have commented on rising obesity in the past and reinforced the need to build the 'rugged' individuals (C. J. Chua & Tan, 1990; Ho, 2011). As a result, the Trim and Fit (TAF) programme was introduced in 1992 in an effort to reduce youth obesity (Fry & McNeill, 2011). TAF camps using sports and outdoor adventure activities were organised by schools during this phase to develop physical fitness and reduce the obesity of the students in the TAF programme. Fry and McNeill (2011) posit that such a focus on physical fitness and reducing obesity rate among the students further devalued physical education in public perception.

Phase three: ability-driven (1997-2010)

Another radical change took place in the late 1990s when the government decided to review the curriculum at all levels of education, ranging from primary to secondary and junior college levels. In 1997, a major education reform under the banner of 'Thinking Schools, Learning Nation' (TSLN) was introduced. It aimed to shift away from a "mass-oriented school system with its heavy emphasis on testing students' knowledge of factual content to a curriculum where learning will go beyond simply maximising the potential of the individual" (Saravanan, 2005, p. 97). The TSLN vision is to develop creative thinking skills, and instil a lifelong passion for learning and nationalistic commitment in the young. The four major thrusts of TSLN are to place emphasis on critical and creative thinking, use of information technology in education, national (citizenship) education, and administrative excellence in schools. As such, several curricular changes were effected under the TSLN vision including more interdisciplinary and project-based learning to realise these thrusts (Gopinathan, 2007). Koh (2004) further reiterates that an aim of the TSLN vision is to develop a citizenry with the necessary skills to go global while retaining its roots and identity.

The TSLN vision marked a radical shift from the efficiency-driven paradigm to that of an ability-driven system. A premise of the ability-driven system was to nurture every child based on his or her talents and ability through mass customisation (Goh & Tan, 2009). It acknowledged the need for students to develop a passion for real learning instead of studying just for the sake of obtaining good grades in their examinations. This new education paradigm, known as the Ability-Driven Education, was officially introduced in 1999. It aimed to identify and develop to the fullest potential the talents and abilities of every child whether in the intellect, arts, sport, or community endeavours. This resulted in the set-up of specialised schools such as the Singapore Sports School, the School of the Arts, and the School of Science and Mathematics. Furthermore, schools were encouraged to develop niche areas in arts, sports, community endeavour (service-learning) and outdoor adventure education with additional funding given to successful applicants who demonstrated their niche in these areas.

The ability-driven phase also saw outdoor education included as an optional module in the revised physical education syllabus in 1999 at the junior college (pre-university) level (Ho, 2011). It also marked the formation of the Outdoor Education Section within the MOE in 1999 to oversee the outdoor education, camping programmes and overseas trips organised by schools. The large amount of resources committed by MOE to schools' outdoor education programmes has led to a surge in school organising camp programmes both locally and overseas. For instance, Davie (2001) found that 264 out of a total of close to 360 schools in Singapore have conducted 786 overseas study trips in 2001. Most of these trips have combined lessons with outdoor adventure activities and community service. Almenoar (2005a) reported in 2005 that according to tour operators in Singapore, adventure trips overseas have become popular with secondary schools and junior colleges. This was made possible as MOE had set aside S\$4.5 million annually to support such programmes for students to become rugged (Almenoar, 2005b).

The subsequent education initiatives under the TSLN vision aim to promote greater diversity, autonomy and innovation at the school level. The increase in autonomy, choice of schools at all levels, use of business models for assessing the schools'

effectiveness in delivering learning outcomes, corporatisation, and the promotion of innovation and entrepreneurial activities in schools are salient features of the marketisation of education in Singapore (Goh & Tan, 2009).

Due in part to the key governance principle of meritocracy adopted by the government, heavy emphasis has been placed upon academic achievements by parents, teachers, and pupils alike in high stake examinations (Gopinathan, 2007; Gregory & Clarke, 2003). This is often at the expense of other critical non-academic endeavours such as sports and aesthetics (C. Tan, 2005). This imbalance in the system prompted the MOE to broaden the criteria used to rank school performance in 2004 to include 'rewarding' schools with achievements in non-academic areas such as the aesthetics, physical education, sports, uniformed groups development, citizenship and character development (Ministry of Education, 2004). The outcome of this change with regards to its intent was mixed, as noted by P. T. Ng (2007).

Following the adoption of the TSLN vision, another major educational initiative took place in 2004 with the launch of the vision of Teach Less, Learn More (TLLM) by the current Prime Minister, Mr Lee Hsien Loong (H. L. Lee, 2004). This led to a major review of the curriculum focusing on three broad areas of enabling teachers, nurturing students, and the development of holistic assessment (Gopinathan, 2007). More resources were given to schools through the addition of 1000 primary teachers, 1400 secondary teachers and 550 junior colleges/centralised institutes teachers. Moreover, primary schools could also obtain up to S\$100,000 in funds to develop niche programmes in both academic and non-academic fields. This resulted in some primary and secondary schools developing their niche in outdoor education though most of the programmes are mainly adventure-based pursuits such as wall climbing and challenge ropes courses.

Education in Singapore is rated as one of the world's top performing systems as assessed by its students' outstanding performances in international tests in mathematics and science. However, most observers have attributed this success, in part, to didactic teaching, rote memorisation and drill, and high stakes testing (Dimmock & Goh, 2011). In recognition of this, the government realised the need to change the system. Subsequently, in reiterating the government's position that

“our educational outcomes cannot be determined by a narrow and single measure of academic performance”, former Minister of Education, Dr Ng Eng Hen, reinforced the need for students to stay rooted to Singapore, anchored in values and character (E. H. Ng, 2008). This marked the preamble to the next phase of education policy as part of the endeavour towards a more balanced and holistic education.

Phase four: values-driven (2010-present)

This new ‘values-driven’ education phase aims to create a student-centric and holistic education through a policy shift towards a ‘total curriculum’ whereby more curriculum time is allotted to non-academic disciplines such as the arts, physical education, sports, outdoor education, social and emotional learning, as well as citizenship and character education. Major reviews of the Primary Education Review and Implementation Committee (PERI) and Secondary Education Review and Implementation Committee (SERI) were set up by MOE in 2008 and 2009 respectively. I served as a member of the PERI Committee representing the interests of outdoor education. The main intent of these review committees was to study how the 21st Century competencies as defined in four broad student outcomes as a Confident Person, Self-directed Learner, Active Contributor, and Concerned Citizen (see Figure 2) could be infused into the curriculum to bring about the desired outcomes of education. A 21st Century Competency Framework (Ministry of Education, 2015) was also officially introduced in 2010 with the purpose of developing the competencies deemed appropriate for future-ready students (see Figure 2). The emphasis as highlighted by former Minister of Education, Dr Ng Eng Hen (E. H. Ng, 2008) is on equipping our young with the appropriate skills and mind-sets to prepare them to navigate a fast changing, globalised world. Commonly referred to as the “21st century skills”, the framework stresses the need to develop thinking, communication, collaboration and management skills. As another desired outcome of education, added competencies are also required to produce a confident person, a self-directed learner, a concerned citizen and an active contributor. Three domains, namely: (1) critical and inventive thinking; (2) communication, collaboration and information skills; and (3) civic literacy, global awareness, and cross cultural skills, were identified as essential emerging competencies for preparing students for the future workforce. The

placement of core values at the core and the social and emotional learning competencies in the middle ring of the Competencies Framework signifies their importance in the new drive towards a values-driven education.

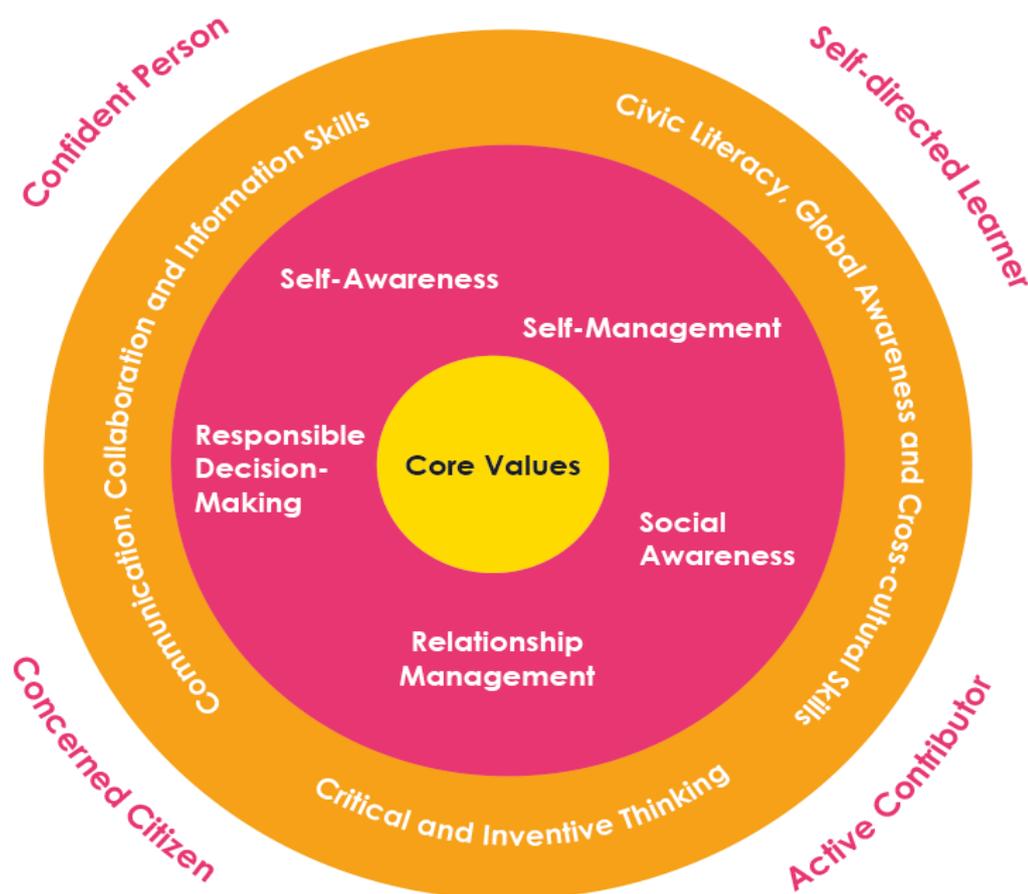


Figure 2. 21st Century Competencies Framework (MOE, 2015)

The PERI Committee Report argues for the need to change the mind-sets on curriculum and pedagogy as well as to build the capacity of the teachers and schools to implement the necessary curricular change (Deng, Gopinathan, & Lee, 2013). The Report also calls for more emphasis on non-academic aspects of the Primary curriculum through active outside-the-classroom experiences such as sports, outdoor education and experiential learning activities. Similarly, a major initiative that the SERI Committee Report calls for is the emphasis on the development of the students' social emotional (SE) competencies to prepare them to be future-ready. An outcome of these major changes in the direction of education is the creation of

the Curriculum 2015 (C2015). This was formulated to guide thinking about future changes in three broad areas: competencies for the 21st Century; people skills such as working collaboratively in teams and across cultures; and rootedness and values (E. H. Ng, 2008). The creation of a 'total curriculum' through C2015 reinforces the importance of a balance between the academic and non-academic domains for the holistic development of our students. This is a paradigm shift as some of the non-academic domains such as aesthetics, sports, and outdoor education were previously regarded as outside the formal curriculum or at best, co-curricular activities, are now included as core curriculum domains. A new Student Development Curriculum Division (SDCD) in the MOE was formed in December 2011 to oversee these non-academic aspects of the core curriculum. These include the arts, music, physical education, sports and outdoor education, social emotional learning, as well as citizenship and character education.

Main Forces Influencing Changes in Education and Curriculum Policies in Singapore

As can be seen through the four phases of the education and curriculum reforms described above, Singapore's education policies are driven largely by instrumental aims. As Weimer, Vining, and Englewood (2004) posit, policy-making is about change and it is through policy that governments seek to reform their educational systems. In this aspect, the education policies have managed to evolve and stay focussed on the production of an educated workforce in order to contribute to the economy, a key function of the system. The education system can be described as neo-liberal. In fact, the greater extent of the close interconnections between education and economic growth is even more apparent in Singapore when compared to most developed countries (Dimmock & Goh, 2011).

Globalisation in its economic, cultural and social manifestations has led Singapore, as well as many governments around the world, to re-examine their national education systems. The systems aim to develop specific skill sets that are supposedly essential for preparing young people for success within the knowledge economy. Economic globalisation together with rapid technological advancement and communication have also resulted in the emergence of the phenomenon of

‘marketisation’ of education which has drawn world markets and cultures closer together (Goh & Tan, 2009). This has led to the convergence of education reforms across countries trending towards decentralisation and performativity in education (Goh & Tan, 2009). Greater attention is now paid to process, higher order thinking skills, better utilisation of technology in education, and changes to assessment to meet specified academic outcome targets (Gopinathan, 2007). At the same time, the advent of the internet and other forms of information technology with the rapid spread of ideas across the national boundaries are viewed as potential threat to cultural, linguistic and religious homogeneity. Hence, there have been renewed calls by many governments for education systems to emphasise values education in order to strengthen social cohesion and maintain cultural continuity (J. Tan, 2011). Likewise in Singapore, the recent educational reform is geared towards what MOE termed as more student-centric and values-driven education.

Citizenship is another aspect of globalisation which has been a constant cause of anxiety by the Singapore government. With globalisation and its creation of new economic, social and cultural arenas that transcend national borders, the main concern of political leaders is that the young and skilled Singaporeans who aspire for greater freedom and individual choice are emigrating. Consequently, “developing a more profound sense of citizenship has become a government imperative” (Sim & Print, 2009, p. 381). Thus, the government’s solution to the lack of a Singaporean identity was to introduce National Education in 1997. The purpose, according to then Deputy Prime Minister Lee Hsien Loong, is to transmit the “instincts and attitudes to succeeding cohorts of students” and make them “part of the cultural DNA which made us Singaporeans” (H. L. Lee, 1997, p. 1). Schools were encouraged to infuse National Education within both the academic and non-academic programmes; including physical education and outdoor education. Subsequently, with the creation of C2015, a new Citizenship and Character Education curriculum incorporating social studies, national education and civic literacy was formulated and enacted in all schools. The Singapore education system thus adopts a handmaiden role to the dual national objectives of sustaining economic growth and developing a sense of national identity (Horsky & Chew, 2004).

Curriculum Planning and Construction in Singapore schools

L. Yates and Grumet (2011) describe ‘curriculum’ as an ambiguous term as it encompasses different kinds of focus. These include: policy statements at the overarching level, curriculum guidelines and frameworks, textbooks, as well as the enacted curriculum of what teachers do and what happens in classrooms. There are also unintended and hidden curriculum relating to school practices and environment, as well as the issue of what young people themselves receive and perceive as curriculum. Ben-Peretz (1975) also reminds us that though implementers and evaluators tend to view any curriculum as the embodiment of the intentions of its developer, often the curriculum materials will express more than these fixed intentions. The curricular materials may also be interpreted and used in many different ways. Elmore, Sykes, and Jackson (1992) further highlight the tensions between the formal intent of curriculum policies and subsequent policy actions at the individual and institution levels. They found that policies are often interpreted and implemented very differently across localities. Albeit the pressure of increased external controls on the curriculum, schools and teachers can enjoy considerable discretion over what is taught to the students. This is increasingly the case in Singapore presently. The desire by schools to have considerable control over what should be taught has resulted in a significant change in the curriculum landscape recently towards a “school-based curriculum development”. This is despite the existence of a national curriculum and a central curriculum agency, the Curriculum Planning and Development Division (CPDD) within the MOE (Gopinathan & Deng, 2006).

However, while school-based curriculum development is thriving in Singapore, Dimmock and Goh (2011) caution that the norms, structures and processes associated with delivering 20th century curriculum have become irrelevant. The reality is that our schools will need organisational re-design in order to support and design new curricula, pedagogy and assessment that are relevant in the 21st century. At the systemic level, for instance, there is a critical need to re-look at many of the academic subjects that are enshrined in the Singapore-Cambridge General Certificate of Examination ‘Ordinary’ Level and ‘Advanced’ Level. These have inherited the priority in allocation of financial and other resources such as

manpower and time allotted over other educational endeavours in light of the move towards a student-centric, values-driven education. The time allocated for physical education in school, for example, is still proportionally low despite the recent one-hour increase per week for all the levels in the subject as compared to that of other subjects such as mathematics, english and the humanities. This has resulted in subjects such as physical education being marginalised (McNeill & Fry, 2010) due to the traditional focus on the academic subjects. Hence, Dimmock and Goh (2011, p. 215) argue that though we are already in the second decade of the 21st century, school systems around the world are still endeavouring to transform their curriculum and pedagogy that “are deeply embedded in their DNA from the 20th century” and Singapore is no exception. They therefore call for a fundamental organisational re-design to support and design new curricula, pedagogy and assessment.

Development of Outdoor Education in Singapore schools

In this section, I trace the historical development of outdoor education in Singapore schools, highlighting the influential role of the State to serve the national agenda. This is markedly prominent since obtaining independence from 1965.

The roots of outdoor education in Singapore schools can be traced to the camping movements established in the early part of the 20th century. Pioneer youth organisations such as the Boy Scouts (1910), Girls Guides (1917), Girls Brigade (1927) and Boys Brigades (1930) have delivered outdoor adventure and camping education in schools as part of their manifestos. However, the programmes run by these youth organisations were limited to a relatively small group of students. Historically, outdoor education was conceived as a range of informal outdoor activities without explicit curricular guidelines (Atencio & Tan, 2016; Ho, 2011). Contemporary outdoor education in Singapore in the form of organised camping and outdoor education by schools for a relatively large cohort of students began about four decades ago following Singapore’s independence in 1965 (Ho, 2011; Y. S. M. Tan & Atencio, 2016).

The primary purpose of outdoor education in the early days of independence then was to develop physical fitness and ruggedness in the individuals for the defence of

the country (Atencio et al., 2015; Ho, 2013; Y. S. M. Tan & Atencio, 2016). This stems from the urgent need to build up Singapore's defence capability following its independence with the enactment of the National Service Act that mandates all able-bodied male Singaporeans to enlist for National Service at age 18. The fact that there were two Battalions in Singapore under the control of a Malaysian brigadier and there were elements in Malaysia that harboured the wish to reverse Singapore's separation in 1965 hastened the priority to build up the Singapore Armed Forces (Neo & Chen, 2007). Thus, extra-curricular activities (ECA) which are organised activities that students engage in after formal school hours, such as the National Cadets Corps (NCC) and the National Police Cadet Corps (NPCC) were specifically set up. The NCC and NPCC were resourced and managed by the Ministry of Defence (MINDEF) and Ministry of Home Affairs (MHA) respectively together with the MOE. They serve the purpose of getting parents to identify their sons and/or daughters with the army and police. Secondary schools with 1000 or more student enrolments were required to set up NCC and NPCC units with at least one third of their student cohort to be enrolled in either the NCC or NPCC. One aim of the NCC and NPCC was to dispel the fear and resentment of the uniformed organisations such as the police and army as symbols of colonial coercion (Ho, 2013).

Outdoor education in the form of outdoor adventure and camping activities were included to serve mainly as a means for these uniformed youth organisations to build physical and mental toughness in Singapore youths. These outdoor adventure activities were typically in the form of adventure courses organised mainly by the British Army and based in Pulau Ubin, an offshore island situated at the North-Eastern part of Singapore (Ho, 2011). Following the formation of Outward Bound Singapore (OBS) in 1967, and its management by the MINDEF from 1971 till 1990, students in the school uniformed groups, especially boys, were given priority to attend its free adventure training and leadership courses.

Outward Bound Singapore and Outdoor Education

In response to the call by the first Prime Minister, Lee Kuan Yew, to develop a 'rugged and dynamic' society (K. Y. Lee, 2000, p. 25), adventure clubs within the community centres and sea sports clubs in Singapore were set up by the People's

Association (PA), a statutory board. These clubs offer subsidised courses and technical skills training in both land and sea-based adventure pursuits such as hiking, rock-climbing, kayaking, and sailing. Another notable contribution of PA to the development of outdoor education is in its formation of the OBS in 1967, an idea that was mooted by the then Defence Minister, Dr Koh Keng Swee. New Zealanders, Hamish Thomas and Alistair Cameron from the Cobham Outward Bound School in Anakiwa, New Zealand were invited to set up OBS that year in response to the call for the building of a 'rugged' society in Singapore by its leaders (Outward Bound Singapore, 2007). Hamish Thomas subsequently became the first Director (Warden) and Alistair Cameron, the first Chief Instructor of OBS. The first OBS course in Singapore began in February 1968.

When Thomas and Cameron returned to New Zealand in 1969, the local instructors began to develop more localised OBS courses (Ho, 2011). However, this period of autonomy of programme design and improvisation of resources by local instructors was short-lived. The management of OBS was handed over to MINDEF in 1971 who promptly replaced the pool of instructors with army personnel. OBS was run military-style complete with army cooks and support staff, from 1971 until its return to the PA in 1991. Subsequently, OBS became a conduit for the ordinary Singaporean men and women to get a taste of military life through the provision of military-style adventure and leadership training. As mentioned earlier, the NCC and NPCC boys were given priority to attend the OBS courses as a main purpose of having the management of OBS under MINDEF was to prepare the boys for National Service. It was not until 1992 when the management of OBS was returned to the PA that this priority for boys to attend the OBS was totally removed. Presently, personal growth and team development for youths of both sexes remains the mainstay of OBS programmes (M. Tan, 2005).

Training and Professional Development of Outdoor Educators

Outdoor education is still in a relatively infant stage of development in Singapore (Ho, 2011; Tay, 2006; Yeong, 2012). This can be seen in the lack of provision of training and professional development for the profession. Presently, only two organisations have arguably been leading the growth and presence of outdoor

education in Singapore: MOE and OBS (Ho, 2011; Tay, 2006; Yeong, 2012). These two organisations are currently the main professional development providers for outdoor education teachers and service providers. However, they focus mainly on technical adventure pursuits, safety, and risk management skills training. I will discuss further the provision of training and professional development of outdoor educators in the next chapter.

Similar to New Zealand and Scotland (see Cosgriff et al., 2012; Higgins, 2002), outdoor education in Singapore occurs in many contexts and in multiple forms. It occurs in both formal and informal educational settings; including schools, tertiary institutions, uniformed groups, clubs and other voluntary service organisations. This section outlines outdoor education in the Singapore schools' context as it is the focus of this research study. It discusses the role and policy as well as the curriculum construction in both the formal and informal aspects of outdoor education provision in the schools.

Role of Outdoor Education in Singapore Schools

As part of the government's impetus to build physically fit and rugged youths, schools were strongly encouraged to get their students to participate in sports and physical activities and to develop a positive attitude towards adventure-type activities (Ho, 2013). Regular calls by Singapore's leaders to build a 'rugged society' (see for example; C. J. Chua & Tan, 1990; K. Y. Lee, 2000; Shanmugaratnam, 2004) resulted in schools organising adventure-based activities and camps both locally and overseas for their students in response.

The policy of ensuring that all school students will go through at least one camping experience each in their primary and secondary school life was implemented by MOE in order to achieve this aim. This led to the proliferation of mass cohort adventure camps organised by schools. Outdoor education programmes such as residential adventure camps and expeditions are regarded by the government as a useful medium to develop important life skills and attributes. In his reply during the parliamentary debate on the education budget in March 2004, then Minister of State for Education, Mr Chan Soo Sen, stated that:

Rugged activities, e.g. sports, adventure camps, expeditions, uniformed groups and so on, 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. MOE is exploring ways to provide students, particularly those who are not involved in competitive sports, with more opportunities to participate in rugged activities. For example, we encourage schools to provide every secondary school student with two residential camp experiences. The Adventure Centres run by MOE and other organisations can provide at least one of these camp experiences. The other could be a 'camp on campus' within the grounds of the school (Chan, 2004).

These life-skills and 'character-building' outcomes were reinforced by Prime Minister Lee Hsien Loong through his maiden National Day Rally speech in August 2004. He encouraged all schools to send their students to camps by highlighting the case of an independent school that has incorporated outdoor education programmes within its formal school curriculum (H. L. Lee, 2004; Outward Bound International, 2004). The government's support for the value of outdoor education in the life skills and character development of our students is reflected in the policies and provision of resources to schools. These are in the form of subsidies, consultancy services and professional training and development of the teachers to enable them to organise outdoor education programmes.

Outdoor Education Curriculum and Co-Curriculum in Singapore Schools

Although the MOE has initially adopted the definition of outdoor education by the National Association for Outdoor Education (NAOE) in the United Kingdom which defines it as a teaching process (means) rather than as a distinct body of knowledge, the reality speaks otherwise. Ho (2011) found in her study that this definition has not necessarily informed the practices in Singapore schools. She observed that outdoor adventure activities such as kayaking, rock-climbing and sailing are closely associated with outdoor education in schools. Hence, it gives the perception that

outdoor education in Singapore schools is equated with outdoor adventure activities rather than as a means of approaching various educational objectives implied in the NAOE definition. This finding is evidenced by subject specialisation of the teachers appointed to formulate and implement the outdoor education programmes. The majority are PE teachers and amongst them, those who graduated from 1986 to 1992 were taught specific outdoor adventure pursuit skills such as sailing, kayaking, orienteering and camp-craft.

While there has been a growing disquiet with aspects of contemporary outdoor education practice by outdoor educators elsewhere in the world recently (see for examples: Brookes, 2003a; Brown, 2008b, 2009; Seaman, 2008; Zink & Burrows, 2006), this does not seem to be the case in Singapore. The vast majority of the outdoor education programmes organised by schools uncritically adhere to the use of adventure-based activities.

All school-based outdoor education programmes come under the jurisdiction of the new Student Development Curriculum Division (SDCD) in the MOE with two sections to oversee the outdoor education programmes in schools: (a) the Uniformed Groups Section, and (b) the Outdoor Education Section. The Uniformed Group Section specifically monitors all the school uniformed group programmes that include 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. Six out of nine of them have established campsites with some equipped with adventure facilities such as climbing walls, ropes course and kayaks.

One of the functions of the SDCD is to formulate, review, and implement outdoor education policies for schools. With the formation of the SDCD, outdoor education is offered in both the core curriculum and co-curriculum within schools. Within the curriculum, it is a mandatory module for all primary one and two students under the Programme for Active Learning (PAL). It is also a mandatory module of the PE curriculum for all students from primary to pre-university levels. This is a significant development as prior to 2014, it was only an optional module of the PE curriculum for the pre-university students. Prior to 1 August 2013 when a key policy

change to include outdoor education in the formal curriculum under physical education was announced, outdoor education was regarded as an approach rather than a subject (Martin & Ho, 2009) in consistent with the stand taken by the MOE. Previously, it was mainly offered as a CCA in all schools in the forms of school organised outdoor education camps, Outward Bound adventure courses and student clubs such as the uniformed groups and outdoor activities clubs. Schools are also encouraged to organise their residential outdoor adventure learning camp based at the MOE outdoor adventure learning centres (OALC) within the curriculum.

The formulation, implementation and review of policies related to outdoor education come under the purview of the Outdoor Education Section in SDCCD. The Section was set up in 1999 and comprises a group of senior specialists in outdoor education and teachers seconded to the Ministry from schools for a period between two to three years. Besides the functions described, it also provides consultancy services to schools on outdoor education programmes, conduct safety reviews on these programmes and facilities in schools, and designs professional development and training of teachers. These functions are overseen by the Head of the Section, which is the role I served from December 2005 to December 2011. However, the training and development of teachers is focussed on specific outdoor safety and facilitation skills such as those related to challenge ropes courses, abseiling, climbing, risk assessment and management. The lack of a holistic training framework encompassing other potential aspects of outdoor education such as place-responsive education, ecological literacy and community-based education is striking - a reflection of the state of outdoor education in Singapore.

Nonetheless, there has always been State support for the beneficial role that outdoor education plays in personal and social development and values education for the young (Ho, 2013; Tay, 2006). This support is evident through the measures taken by the MOE to encourage all national schools to provide their students the opportunity to participate in at least two residential adventure camping experiences in their school life. Substantial resources and funding are provided to enable them to carry out the camp programmes for the holistic development of the students. In response to this policy, residential camps organised by schools for all pupils became an integral part of the co-curricular component of the education system.

The subsequent increase in demand by schools for camp facilities also led the MOE to acquire and build four OALCs. These centres, strategically located in all four geographical regions in the land-scarce island nation, have specially-built facilities to cater to the needs of schools for outdoor adventure programmes. Typically, these facilities include: team-building; initiative and problem-solving stations; a high tower for rock-climbing; abseiling and zip-line; both low and high elements challenge course; and ample space for camping and orienteering activities.

Similar to many countries in South-East Asia with a history of past European colonised rule, Singapore has endured a long period of British governance until 1955. The British colonial influence has had significant impact upon our social, political, and education system (Gopinathan, 2007), including the way outdoor education is taught and practised in Singapore schools. Another significant local historical event is the Japanese Occupation from 1942 to 1945, the aftermath of which has shaped the way some national policies are enacted. One such policy is the emphasis on building a ‘rugged society’ chiefly for the main purpose of developing the nation’s own defence capability (Ho, 2013). As observed by various historians of outdoor education, the role it plays, the niche it fills, and how it is funded is influenced significantly by the present political climate (Allison & Telford, 2005; P. Lynch, 2005; Martin, 2010). This emphasis is the main reason why government support for outdoor education through participation in outdoor adventure activities is strong. In the case of Singapore, support is provided for outdoor education through outdoor adventure activities for its potential to develop a ‘rugged and resilient’ society, an important national goal.

Recent Policy and Curricular Changes in Outdoor Education

Until recently, there was no specific outdoor education policy other than those related to camping programmes for both primary and secondary schools. As mentioned earlier, MOE endorses the policy for each student to be given the opportunity to participate in at least one residential outdoor camp experience at both primary and secondary levels. Prior to 2009, it was not viewed as part of the formalised curriculum. According to Ho (2011, p. 1), “it sits on the fringe of the

curriculum whereby schools deliver programmes under the co-curricular framework”. It is also considered as one of those ‘good to have’ programmes that schools could use for their publicity purpose in their recruitment drive. Its place within the core curriculum was also confined to an optional module under the physical education syllabus prior to 2014.

Four significant changes took place recently in the development of outdoor education. The first was its inclusion as a module in the Programme for Active Learning (PAL) in 2009, which is an experiential learning programme conducted once a week between 1.5 to two hours for all primary one and two pupils. This is a significant milestone for the development of outdoor education as it marked its first inclusion within the formal curriculum as a MOE policy intent. The second policy change in 2013 was the provision of additional funding to all secondary schools to develop two distinctive programmes for a more holistic student-centric education: the Applied Learning programme and Learning for Life programme. Both these programmes were offered to all secondary students from 2014. Outdoor adventure learning, besides sports, performing and visual arts, is included as an option for the secondary schools in the Learning for Life programme. The aims of this programme are to provide students with real-life experiential learning to develop their character and values, cultivate positive attitudes, self-expression, and instil a sense of rootedness and responsibility to their community (Ministry of Education, 2013a).

The third policy change related to outdoor education was made in July 2013 when MOE announced that its inclusion as a module within the PE syllabus for all pupils from primary one to secondary three to be phased in across the levels from 2014 (Atencio & Tan, 2016). This was to be fully implemented in 2016 (Ministry of Education, 2013c) when all PE teachers are expected to complete their professional development in this area so as to teach the module proficiently. Up to 20 percent of the total PE curriculum is allotted for it equating to 10 hours per year allotted for this module. Prior to this change, outdoor education was first introduced into the PE syllabus as an optional module for pre-university students in 1999 when the PE curriculum was revised as part of the aim to promote the students’ thinking ‘outside the box’, a TSLN and TLLM initiative. Notwithstanding this, some schools have over the years also introduced outdoor education modules in their PE syllabus as a

niche with orienteering, wall climbing, and challenge ropes course as some activities offered.

In 2013, a framework which serves to guide the teaching and learning of outdoor education in the PE curriculum was crafted (see Figure 3). Three strands underpin the learning outcomes of the framework (Ho, Atencio, Tan, & Chew, 2015). These distinct but related strands are:

- Physical health and well-being;
- Risk assessment and management; and
- Sense of place.

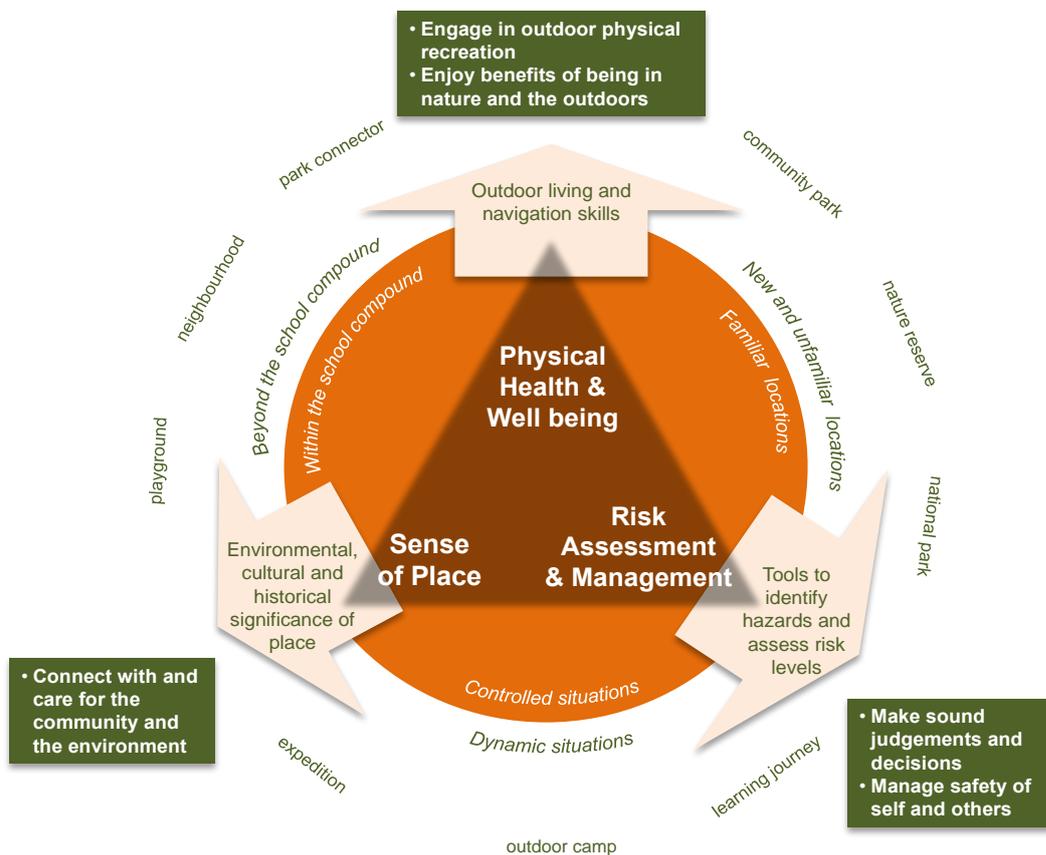


Figure 3. Outdoor Education in PE Framework (Ho, et al., 2015)

Under the strand of physical health and well-being, OE “seeks to teach students how to recreate, explore, enjoy and learn from time with (and in) nature” (Ho et al., 2015, p. 279). This is premised on the compelling evidence from literature that contact with nature is fundamental to human health and well-being. (Ho et al., 2015) contend that in highly urbanised Singapore, many students are likely to get their first experience with nature through OE in schools. The second strand on risk assessment and management aims to provide diverse opportunities to teach students the skills to perform risk assessment and management of risk. It is believed that effective learning could be facilitated through consequential education when students are taught to analyse the risk involved in a given outdoor situation, take action and make decisions with guidance from the teachers.

The third strand of the framework aims to develop a sense of place in the students. It intends to use the outdoor education in PE curriculum to build a strong connection with Singapore, particularly with local places such as green spaces around the schools (Ho et al., 2015). The belief is that outdoor education in the PE lessons could provide the students with the means to learn more of the world they inhabit through repeated visits to local places. It hopes to achieve this by engaging the students in an exploration of both natural and urban environments using a set of progressive experiences.

This curriculum change related to outdoor education is a part of the new policy move towards a holistic assessment in PE which was introduced to all schools in 2016 in order to get students to engage in a wider range of physical activities and sports (Ministry of Education, 2013b). A major change with this new holistic assessment in PE is the descriptive inclusion of students’ participation level, attainment in different physical activities, demonstration of values and attitudes during PE lessons and the reporting on their self-directed physical activities as part of a holistic report. One interesting feature of the change in PE curriculum is in the move away from annual testing of physical fitness to once in two years. It is reiterated, however, that physical fitness will continue to be emphasised as a valued outcome of PE together with attainment in the areas of sports and games, outdoor education and other physical activities such as dance, gymnastics and swimming.

The fourth policy review in outdoor education is the most major one to-date. In 2014, two ministries, namely the MOE and the Ministry of Community, Culture and Youth (MCCY), formed a joint working committee to review the provision of outdoor education for youth. Subsequently, the National Outdoor Adventure Education Masterplan was unveiled by the Singapore Parliament in 2016. The Masterplan maps out not only the provision and the desired learning outcomes for all students, it also includes the infrastructure development and manpower resources to realise its goals. For instance, the set-up of a second OBS campus costing S\$250 million was announced by the Minister of Finance as part of the Masterplan (Heng, 2016; The Straits Times, 2016). This second campus to be completed in 2020 will enable OBS to provide a five-day adventure education programme up to 45,000 secondary three students annually (Yuen & Ng, 2016).

A pilot to recruit a team of 32 teachers and allied educators to serve as full-time outdoor adventure educators and four programme managers in one of the four MOE OALCs was also effected as part of the Masterplan. If the pilot is successful, the plan is to staff all the MOE OALCs with full-time educators to serve the outdoor adventure learning camp programmes for schools. The Masterplan also outlined the existing provision as well as the inclusion of two new provisions for outdoor education in schools (see Figure 4). These are the four-day outdoor adventure learning camp experiences at the lower secondary levels and the five-day OBS experience for the upper secondary students. There are also plans to re-develop the MOE OALCs in support of the outdoor adventure learning curriculum for schools.

Outdoor Adventure Learning Experiences for ALL			
Lower Primary	Upper Primary	Lower Secondary	Upper Secondary
Outdoor Education in Physical Education Curriculum			
<ul style="list-style-type: none"> • Active and healthy lifestyle • Social and emotional competencies 			
Programme for Active Learning (Outdoor Education)	3D2N Outdoor Adventure Learning Camp	4D3N Outdoor Adventure Learning Camp	5D4N Multi-School Cohort Camp in OBS
<ul style="list-style-type: none"> • Social and emotional competencies • Resilience , ruggedness and social cohesion 			

Figure 4. Outdoor provision for all students

School-based Curriculum Development in Outdoor Education

An outcome of the TSLN and TLLM visions is the adoption of decentralised centralism in the school education policy in Singapore (C. Tan & Ng, 2007), resulting in greater autonomy granted to schools in terms of the curriculum design and implementation. Karlsen (2000) introduces the term *decentralised centralism* to denote the dynamic interaction between the centralising and decentralising forces in an educational decentralisation process. He presents four arguments for the case of educational decentralisation (Karlsen, 2000):

- Decentralisation will strengthen democracy by transferring power from central to local bodies, thus enabling more of the decision-making process to be made by schools, teachers and students;
- Decentralisation will promote innovation and school-based development;
- Decentralisation will help the school to better design programmes and activities that are adapted to the needs of the local culture and community; and
- Decentralisation will achieve rationalisation and efficiency.

According to C. Tan and Ng (2007), the Singapore government has clearly expressed its intention repeatedly to decentralise its power, and move to “a more remote supervisory steering model” so as “to provide the platform for diversity and innovation in the school system” (p. 158). It is believed that with increased autonomy, school leaders and teachers will be empowered to make changes at the school level to better meet the needs of their students. School-based curriculum development discourses have also been emphasised as it is seen as a manifestation of discontentment with externally or centrally-based curriculum development (Gopinathan & Deng, 2006). This move towards decentralised centralism in education has led to a proliferation of school-based curriculum development with an increase in action research projects initiated by the schools. Gopinathan and Deng (2006) posit that school-based curriculum development has a strong relationship with action research as it actively involves the teachers in designing, planning, implementing, and evaluating curriculum materials. They maintain that despite having a centralised curriculum system in Singapore, schools and teachers can turn its implementation into curriculum development activities that are relevant and specific to the particular area of learning.

In recognition of this and to encourage school teachers to engage in action research for school-wide innovation and curriculum development, the MOE made funds and resource support such as the academic staff in the National Institute of Education (NIE) and MOE Senior Specialists available through the cluster system. Research activists were formed in various schools to encourage research at the school level. The active encouragement of schools to engage in action research projects have arguably benefited disciplines such as PE and outdoor education which were largely absent in the past.

The proliferation of school-based curriculum development offers further opportunities for the inclusion of outdoor education both within and outside the curriculum as the school administrators, middle managers, and teachers have more autonomy to design the ‘total curriculum’ to fit the needs of their students. Some schools offer integrated outdoor adventure education programmes for their entire student cohort. There is also an increase in schools using term time to organise

level-wide camp instead of utilising school holiday periods as is the norm in the past. Both the schools involved in my research project are examples of school-based curriculum development initiatives in outdoor education within the school curriculum that are driven primarily by the school staff.

Issues with Policy and Curriculum Changes in Outdoor Education

While the prognosis for outdoor education with recent policies and curriculum changes is encouraging, its successful implementation may pose a challenge in some aspects. For instance, the policy announced on 1 August 2013 to include outdoor education as a non-optional module in the PE curriculum posed a huge challenge in terms of the efficacy of its implementation scheduled in phases from 2014 onwards. Firstly, as alluded by Evans and Penney (1998), the real impact of a state policy is dependent upon the way it is interpreted at the implementation stage. It is dependent upon how the various stakeholders such as the school administrators, middle managers, teachers, students, parents and educational service providers interpret and implement it. Syllabus implementation dialogue conducted by the OE Section for the PE teachers revealed that they are unlikely to include the outdoor education module within the PE curriculum if they are unclear of the underlying objectives behind it. They will also not implement it despite it being ‘mandatory’ if they do not receive the necessary training before its roll-out date. This is understandably so as the vast majority of PE teachers do not have formal training in outdoor education since it was not included in the teacher training curriculum in the NIE prior to 2014.

Secondly, as several policy researchers (see for example: Evans & Penney, 1998; Ozga, 2000; Rizvi & Lingard, 2010) have pointed out, though policies are often assumed to exist as a product in texts as a written document, they can also be viewed as a process involved in the production of an actual text as well as its implementation and evaluation. It involves negotiation, contestation or struggle between different groups of stakeholders who may be outside the formal machinery of official policy-making. The lack of consultation with the various groups of key stakeholders including school administrators, teachers and students on the outdoor education module within the PE curriculum is jarring. Bowe, Ball, and Gold (1992)

warn that the state control model of policy with its distinct conception of ‘makers’ and ‘implementers’ distort the policy process as it reinforces a conception of policy in which theory and practice are separate and uneven privileges are paid to the former. The main issue is that the generation of policy remains largely within the theoretical analysis of policy documents and activities and organisation of groups of policy-makers. Schools remained a ‘marginal group’ and the voices of the principals, senior managers, teachers and students remain mostly silent in the generation of policy (Bowe et al., 1992). This scenario appears to be the case in local outdoor education based on my personal conversations with teachers and colleagues in the OE section during our visits to schools.

Moreover, Ball (1990) suggests that policy is a matter of allocation of values by the authority and policies are the operational statements of values. These statements of values are not free of their social context and the questions we need to ask are whose values are validated in policy, and whose are not (Ball, 1990). The authoritative allocation of values raises the notion of the policy concept of centrality of power and control. The issue, according to Evans and Penney (1998), is “...who controls and uses power for which interests in order to focus on the means by which power operates” (p. 75). They contend that there is an unevenness of the power of relations inherent in the policy process and differences in the capabilities of actors to influence a policy text. Giddens (1979) further reiterates that there is a tendency to overlook another dimension of power which is “the capability of actors to secure outcomes where the realisation of these outcomes depends upon the agency of others” (p. 93). Bowe et al. (1992) regard separating policy formulation from its implementation by privileging the former over the latter as artificial and simplistic. It has been suggested, thus, that whatever the policy, teachers need to find it meaningful and have a sense of ownership if they are to implement the policy effectively (Fullan, 1993; Hargreaves, Earl, Moore, & Manning, 2001). Sim and Print (2009) add that not only must teachers be knowledgeable about the policy, they must also be given the opportunities to discuss and construct shared meanings from it. The sense of ownership plus appropriate professional development support is essential if the inclusion of outdoor education module within the physical education curriculum is to have a better success rate.

Policies and Curriculum Renewal in Outdoor Education in Singapore - Are We Ready?

In my view, this curriculum renewal period, while offering the prospects of an increased provision of outdoor education, could be a double-edged sword. The current content of the outdoor education module in the PE syllabus in schools is confined mainly to adventure pursuits-based activities. These include wall climbing, bouldering, orienteering, and 'Project Adventure' type of team-building games which incidentally may also not take place outdoors in some schools. Furthermore, as mentioned before, the lack of trained PE teachers in designing and implementing the outdoor education pedagogy may act as a stumbling block to its effective delivery, thus affecting its development. Hence, making outdoor education as a mandatory module within the PE curriculum without the corresponding provision of the necessary training and professional development of the PE teachers is problematic. Inadequate training of the PE teachers in the area of curriculum design, pedagogy and assessment may lead to more harm than good (Martin & McCullagh, 2011). Martin and McCullagh (2011) also argue, in the case of Australia where outdoor education is included as a component of PE by the Australian Council for Health, Physical Education and Recreation (ACHPER), that the inclusion of it "is misleading and demonstrates a lack of contemporary understanding of the distinctive contributions made by these two disciplines to education" (p. 67). They maintain that while outdoor education is historically linked with PE, it has since evolved to pursue "strong environmental goals" (Martin & McCullagh, 2011, p. 75). There are conceptual parallels in the calls by Penney and Jess (2004) for physical education to consider life-long learning with relevance to students' lives and learning beyond schooling and advocacy from Wattchow and Brown (2011) of a place-responsive pedagogy in outdoor education to teach students how to live well in their wider lives and bioregion. However, Martin and McCullagh (2011) assert that the motive of service that underpins these two professions has differed over time. Their contention is that PE and outdoor education are complementary but discrete disciplines with differing motives of service. I believe that the argument put forth by Martin and McCullagh (2011) needs to be critically examined and recommendations put forth to mitigate or address the issues related to the inclusion of outdoor education in PE now that it has become a reality in Singapore.

The inclusion of outdoor education as one of the four mandatory modules under the PAL initiative for all primary one and two pupils has been welcomed by schools as a positive development. However, the design and delivery of this module has been outsourced to external outdoor service providers by most schools. This is due in part to the easy availability of funds from the MOE. Schools and teachers have also feedback to the MOE that they are outsourcing the outdoor education module due to the lack of time as well as expertise in designing and delivering it. There is a need to evaluate the impact on the learning outcomes of the students given the reality that many schools will be outsourcing the outdoor education module within PAL due to a lack of qualified staff (Atencio & Tan, 2016; Atencio et al., 2014, 2015; Ho, 2011).

Based on my professional observation, I believe a transformation of practice is required if we want to seize the opportunity provided in the curriculum renewal to increase the levels of outdoor education. Conversely, maintaining the status quo without a critical evaluation of existing practice may lead to eventual decreased levels of provision. This is in light of the ever crowded curriculum as shown in the increase of curricular periods for arts and music, pastoral care and guidance, social emotional learning, citizenship and character education, as well as PE and sports. A potential solution is through research on alternative critical outdoor education pedagogies that could better inform practice.

Summary

Current policy change towards a student-centric, values-driven education and curriculum renewal for a more balanced curriculum present the prospects of increased outdoor education. It is recognised by the MOE as an enabler to the development of the 21st century competencies and desired outcomes of education for our students. This is indicated in the formulation of the National Outdoor Adventure Education Masterplan by the government in 2016. It is also included in the 'total curriculum' through the PE curriculum, PAL initiative in primary schools, and co-curricular programmes such as the Learning for Life programme. However, while there are prospects for increased outdoor education (Atencio et al., 2015),

they also beg the important question of: “Are we ready?” I argue that this period of curriculum renewal may also serve as a threat leading to an eventual decreased level of outdoor education. This is in light of an incoherent programme and lack of professional development of both outdoor educators and physical educators in outdoor education pedagogy. A decrease may be accelerated if the outdoor education community fails to respond to the changing focus of the education system by increasing the quality and effectiveness of its provision and delivery. Hence, I posit that adhering to the status quo of our prevailing practice may not only curtail these prospects but also lead to a subsequent decrease in the delivery quality despite the potential increase in allotted curriculum time.

As I have highlighted in Chapter One, there are six issues that may hamper the progress of outdoor education within the renewed curriculum. These issues may create barriers to the sustained development of outdoor education if not addressed. I will discuss these in the next chapter. I contend that a critical action-oriented research on place-responsive pedagogy through the study of place with its social, cultural, historical, and ecological contexts has the potential to bridge the arguably fragmented provision and under-realisation of deeply embedded and connected learning experiences in the Singapore outdoor education practice. Moreover, I will argue that the two important educational outcomes desired for our students, namely: to stay rooted to Singapore by developing a sense of collective identity through civic literacy and citizenry education; and to be culturally competent and contributing global citizens who will do their part in solving global problems, could potentially be achieved through embracing place-responsive outdoor education pedagogy.

Chapter Three: Outdoor Education in Singapore Schools

Introduction

In the previous chapter, I highlighted the role and functions of outdoor education in the context of Singapore as a small nation highly dependent on its strategic location and human resources for survival. Historical developments have resulted in national policies adopting the neo-liberal view of education. This has influenced the way outdoor education is perceived and practised. In this chapter, I outline the issues of current outdoor education practices as follows:

- i. Historical influences of imperialism and militarism with a focus on individualism, traditional adventure pursuits and character building;
- ii. Unexamined concepts from ‘imported’ pedagogy based on ‘adventure programming’ (see for example: Luckner & Nadler, 1997; Miles & Priest, 1999; Priest & Gass, 2005) such as adventure, risk, challenge by choice, and the comfort zone model;
- iii. Commodification and marketisation of outdoor education due to the influence of the predominant consumerism culture and modern technology;
- iv. Lack of education for sustainability;
- v. Inadequate professional development of outdoor educators; and
- vi. Shortage of outdoor education research in the South East Asia urban context.

These issues highlight the wide and often uncritical acceptance of Singapore outdoor education practice. I argue that they curtail our effort to prepare our students to be future-ready in light of rapidly changing socio-cultural, political, and ecological landscapes locally and globally. A review of the literature on place-based pedagogy as well as development of outdoor education internationally is undertaken to draw out potential lessons for Singapore. The case for a more place-responsive pedagogy is proposed as an alternative to outdoor education practice in schools.

Issues of Outdoor Education Practices in Singapore

I. Imperialism, Militarism and Other Historical Influences of Outdoor Education in Singapore

Several authors such as Beedie (1995), Brookes (2003b), Loynes (2008), Lugg (2004), Nicol (2002a) and Wattoo and Brown (2011) for instance, have discussed the strong influence of imperial and militaristic historical antecedents on outdoor adventure education practice in the UK, Australia and New Zealand. Similar to the situation found in these countries, contemporary practice of outdoor education in Singapore schools “retains a strong personal development and character building focus” (Martin & Ho, 2009, p. 82). Martin and Ho (2009) note that the emphasis on personal development and character building in schools is attributed in part to Outward Bound Singapore (OBS) as the main training institution for outdoor educators. The practice of OBS is in turn largely influenced by imperialism, militarism and other historical factors from our British colonial past. Loynes (2008) presents a valid argument on the need for outdoor educators to question the assumptions behind the type of traditional outdoor activities that are still in practice today in the UK; which parallels that practiced in Singapore due to our British colonial past. He argues that the meanings and values attached to the structure of traditional outdoor activities used as the content in the programmes during the Victorian era may have changed. An example cited is the use of map and compass in navigation as a central area of knowledge and skill in the early youth movements such as the Scouts. He reiterates that these specific skills were used in those times to help soldiers control their location in time and space on enemy terrain and some of the early youth movements were used to prepare young men for war. While the goal of preparing young men for war has disappeared from the agenda of these youth movements, the activity of orienteering has remained. He contends that the continued use of such traditional outdoor activities would not necessarily be constructive to the educational experience of current students. Besides orienteering, other outdoor activities with imperialistic and militaristic traditions such as ‘pioneering’ (an activity involving the use of ropes and wooden spars to create a structure commonly practiced by the Scouts), negotiating ‘ropes obstacles course’, seeking out exotic places and ‘wild nature’ for adventure; are still being practised

in Singapore schools. Loynes (2008) argues that there are other ways of learning which may be more suited for the educational purposes and outcomes intended.

Similarly, Ho (2011), questions the appropriateness of outdoor activities such as orienteering, canoeing, sailing, and campcraft that are developed for what she perceived as an individualistic culture like that of the UK and USA. These activities were propagated in schools as they were introduced as part of the outdoor education module for the training of the PE teachers by the National Institute of Education (NIE); the only teacher training institute in Singapore. In contrast, she contends that the Singaporean society places more emphasis on community and interdependence. However, these activities have been accepted widely and uncritically in Singapore without any examination of the context in which they are practiced in their countries of origin.

Zink (2003) suggests that the privileging of outdoor adventure pursuits has curtailed the development of the broader goals of outdoor education. I support this view and believe that the continual emphasis of some traditional outdoor activities in Singapore is problematic. They have limited the opportunities for outdoor educators to explore other forms of activities that are relevant and contextualised to the social, cultural and historical and environmental conditions locally. More emphasis on the use of local crafts such as the Dragon boat (local Chinese traditional rowing boat), and Sampan (local Malay fishing and rowing boat), for examples, could be explored in contrast to the dominant use of the canoe or kayak with external origins in outdoor education programmes. The use of these traditional local crafts can be accompanied with the study of the historical, cultural, social, ecological, community and place/s factors that influence their creation and use.

‘Character building’ in Outdoor Education

Another effect of the imperialism, militarism and historical influences is the unexamined belief in the value of outdoor adventure pursuits for ‘character building’. This belief that rugged adventure activities will build character is persistent among practitioners, school administrators and politicians alike. Many Singaporean schools adopt mainly ‘Neo-Hahnian (NH) approaches’, a term

suggested by Brookes (2003a) to refer to the use of ‘character-based’ theories to deliver outdoor education programmes. Brookes (2003a) maintains that the NH approaches exemplify the early youth movements in the UK and USA that emphasised character building (personal transformation) as the main tenet of outdoor education. This is often done through one- or a series of episodes of outdoor programmes such as a residential camp or an Outward Bound course. He challenges the concept of transferability of ‘character building’ through this NH approach. Character traits are “supposed to manifest themselves consistently in diverse situations: trustworthiness on the mountains implies trustworthiness at work” (Brookes, 2003a, p. 49). He argues against the notion that an individual’s character traits such as honesty, trust, and compassion that may be developed in a NH outdoor education programme would be transferred across to another setting outside the programme. The trait-behaviour shown by individuals and their trait changes observed in an outdoor education situation are not strong predictors of future behaviour in other situations. He cited findings from the psychological literature that are unequivocal that character traits and their development are situational. The demonstration of a trait through behaviour is dependent on the context. A particular trait or behaviour demonstrated in one situation is no guarantee that it will be expressed in another setting. Brookes (2003a) concludes that while outdoor education programmes may provide situations that elicit certain desirable behaviours, they do not necessarily build character.

While the focus on ‘character-building’ outcomes may be harmless and even useful sometimes, Brookes (2003a) argues, on the other hand, that there can be potential harm if interventions are made in the participants’ lives based on fallacious assumptions. He cautions the reliance on the NH approaches to deliver outdoor education programme. The focus on ‘character building’ can be detrimental as it universalises outdoor education at the expense of attention to cultural, social, historical, and geographical contexts, and marginalisation of the experiences themselves. Another concern with an over-emphasis on ‘character development’ is that it may perpetuate the culture of individualism. Hales (2006) warns of the rise in individualism in outdoor education through commodification and proliferation of mobile technology. He explains how the process of individualisation in outdoor education through the adoption of the risk society as well as the ideology of the

neo-liberalism has led to the prioritisation of the self. This is at the expense of other aspects of community and place.

Activity-focused Practice in Outdoor Education

There are substantial research evidences on the positive impact of outdoor adventure activities on the personal, interpersonal and social skills of participants (see for examples: Barratt & Greenaway, 1995; Neill, 1998; Rickinson et al., 2004; Mutz & Muller, 2016; Scrutton, 2015). For instance, the findings by Mutz and Muller (2016) suggest that outdoor education and wilderness programmes can foster mental health in youths and young adults. Scrutton (2015) suggests in his study that outdoor adventure education in the form of residential course and held in inspiring natural environment has the ability to contribute to the personal and social development of primary students. A review of research in outdoor learning by Rickinson et al. (2004), where they critically examined 150 pieces of research published in English between 1993 and 2003, found strong evidences of the benefits of outdoor adventure activities on the adolescences' attitudes, beliefs, self-perceptions, personal and interpersonal skills. However, the research findings from Rickinson et al. (2004) have to be treated with caution as it is conducted in the UK under a very narrow set of conditions and is far from being exhaustive. These findings may not be applicable to all outdoor education practices around the world given the differences in history, culture and locations.

In the Singapore context, research on the outcomes of outdoor education programmes tends to involve mainly Outward Bound courses conducted by OBS (Ee & Ong, 2014). For instance, the study by C. K. J. Wang, Liu, and Kahlid (2006) on 149 female students who participated in a five-day Outward Bound adventure-based programme found improvements in their leadership skills, interpersonal and social skills. Similarly, M. Tan (2005) examined the impact of a five-day Outward Bound course on 800 secondary students using the Life Effectiveness Questionnaire and interviews. Her study reveals significantly higher Life Effectiveness scores on time management, social competence, achievement motivation, intellectual flexibility, task leadership, emotional control, self-confidence, and active initiative. In one of the few studies on outdoor education programmes conducted in Singapore

schools, Ee and Ong (2014) reviewed the outcomes of a two-day adventure-based camp on 93 secondary two students. Their study revealed an improvement in all five aspects of the students' social-emotional competence such as their self-awareness, social awareness, self-management, relationship management and responsible decision-making after the camp.

However, while I believe in the positive impacts of outdoor adventure activities on the personal and social skills of students, I am concerned with the over-emphasis of this aspect in our practice in local schools. Through my professional observations at the MOE OALCs, outdoor education programmes at present tend towards 'neo-experiential education'. Roberts (2008) describes neo-experiential education as a variation of experiential education with the defining characteristics being "its emphasis on efficiency, individual performance, and consumerism" (p. 29). Such outdoor education programmes mirror the 'McDonaldisation phenomenon' coined by Ritzer (2008). This phenomenon describes the trend whereby "much of one's life experience is increasingly provided as a standard, dependable and safe product just like the McDonald's hamburger. It guarantees an adrenaline rush as a predictable outcome, thus losing the essence of adventure being of uncertainty in outcomes" (Loynes, 1998, p. 52). The five dimensions of efficiency, calculability (quantitative aspects of product – portion, size, cost), predictability and control as characteristics in the production of a typical McDonald hamburger (Ritzer, 2013) parallel the nature of Singaporean outdoor education practice. As stated earlier, large numbers of students are increasingly being put through a homogenised, ordered and sequential multi-activity challenge programme such as the challenge ropes course, abseiling, zipline, and climbing wall. This is done in a relatively short span of time usually between one to three days with efficiency and control by the teachers/instructors leading to predictable outcomes in the MOE OALCs. This trend is similar to that in North American schools (Garvey, 1999). In Singapore, about 70,000 students underwent such programmes annually based at the MOE OALCs which are mainly conducted by external service providers (Lui, 2006).

This 'McDonaldised' sequence of sending many students through various activity stations in the shortest time possible with control vested largely by the teacher/instructor has often led to the programmes being activity-centred rather than

learner-centred. Another consequence is the lack of opportunity due to constraints of time for the students to connect and possibly forge relationships with the place they are in. While challenge courses do have a contribution in outdoor adventure education (Roberts, 2011), the danger is that they tend to “lend themselves to a universal approach and to McDonaldisation in a field that has previously valued diversity brought about by the environmental and cultural contexts in which they are practiced” (Loynes, 2013, p. 141). Loynes (2013) reiterates that while it is possible to disembed an activity such as a challenge ropes course and locate it in another setting elsewhere, it is difficult to McDonaldisise a relationship with the environment or a group. He cites the recent history of climbing moving from crags to indoor climbing as an example in which an activity (climbing) is radically being altered by disembedding it from the context in which it was originally located. While the process of transferring an activity from one context to another creates potential rich new experiences to occur, it can also create McDonaldisation through rationalising the experience down to a small number of elements that can be branded and marketed globally. The danger is that when an activity is McDonaldised, “it is no longer part of a cultural story, and nor does it explore a particular landscape. It becomes a replicable structure, often with the same elements everywhere” (Loynes, 2013, pp. 141-142).

As observed by Beames and Brown (2013), this desire for efficiency and predictability in the provision of outdoor education experiences especially with the proliferation of challenge ropes course has not lessened in the western world. In fact, it has increased in countries with developing outdoor education sector such as Hong Kong, Singapore and Taiwan who “have quickly copied what they assumed was best practice” by the western world (Beames & Brown, 2013, p. 4). The danger of adopting this ‘best practice’ uncritically is that it may not have taken into account the different social, historical, geographic, economic and ecological contexts that they have evolved. As posited by Nicol (2002b), the value of outdoor education is in its diverse range of concepts and practices which constitute it, not homogeneity. Hence, the temptation to create a more homogenised outdoor education practice should be resisted.

The proliferation of this ‘MacDonaldisation’ of outdoor education at the four MOE OALCs could arguably be attributed to three specific policy initiatives enacted by the MOE OE Section in the 2000s. The first policy initiative limits using any of the MOE OALCs to only a three-day only booking per year if their intended cohort camp takes place during the week-days. The intent was to enable at least two schools to use each MOE OALC in a typical week given the surge in demand for these Centres from the 2000s. This limitation inevitably caused the majority of schools to confine their camp to two and a half days. This practice became so ingrained that when the change to allow schools to book any number of days at each Centre was effected in 2008, the response from most schools was lukewarm. Moreover, many schools became fixated on sticking to a maximum of three days for their camp programme and this became the status quo even when they booked other non-MOE Centres.

The second policy initiative was equipping all four MOE OALCs with a standardised set of largely artificial structures such as the challenge ropes course, zipline, abseil wall, climbing wall, team-building and initiative games stations. This was to ensure that the teachers trained in the technical skills have a standardised set of facilities, equipment and operating procedures to follow to minimise error of judgement when conducting the activities in the Centres.

The third policy that impacted the provision of outdoor education was its marketisation leading to the outsourcing of the management and operation of three of the four MOE OALCs to external service providers. Again, this resulted in an increased number of schools outsourcing their outdoor education programme to service providers in both the core and co-curriculum. As observed by Fry and McNeill (2011) and Atencio et al. (2015), the sports and outdoor education modules in the Programme for Active Learning (PAL) which is a mandatory two-hour per week programme for all primary one and two pupils were outsourced by most schools to service providers who were non-qualified physical educators. These policy initiatives and the eventual outcomes showed the unintended effects of a policy that could create far reaching and undesirable consequences for the field.

Another important contributory factor to the emphasis placed upon outdoor pursuits is the training opportunities provided for teachers in outdoor education by MOE and external providers. Most of these trainings are in technical and safety skills development in outdoor adventure activities. This is similar to the situation in New Zealand as observed by Irvin (2008a) where the syllabus and assessment framework of the New Zealand Outdoor Instructors Association (NZOIA) qualifications focuses on the technical aspects of practical pursuits like rock climbing, kayaking, alpinism, sea kayaking, and tramping. It has led to the perception by NZOIA instructors is that outdoor education in New Zealand is focussed on outdoor pursuits (Irvin, 2008a).

II. Risk, Challenge and Comfort Zone

The priority placed on skills acquisition, ‘character building’, and personal and social development in practice has kept some specific outdoor activities such as Project Adventure-type team building games, challenge course, wall climbing, abseiling, and zipline as the mainstay of our school programmes. This results in the preoccupation with discourses of risk, challenge, and comfort zone model in our schools in line with the nature of these activities. After all, it has been asserted that a main tenet of outdoor adventure education is arguably the promotion of risk as a central pillar and distinguishing feature (see Brown & Fraser, 2009; Miles & Priest, 1999; Priest & Gass, 2005; Zink & Leberman, 2001). Thus, discussions and efforts are centred on risk reducing strategies and management of physical harm to participants and legal liabilities with these types of programmes. In this section, I review the research literature on risk, challenge and the comfort zone model to examine the validity of their inclusion as the main tenets of outdoor education.

Risk and Challenge

Risk taking is seen as an important feature of outdoor adventure education. James (1980) asserts that “without risk, there would be no genuine adventure” (p. 20). Boyes and O’Hare (2003) warn, however, that “while some sort of danger is essential to an adventure process, unmanaged risks, perils and hazards can lead to negative consequences such as fatalities, injuries and psychological incidents” (p.

63). Conversely, Dickson (2000) argues that too much emphasis on safety will remove the excitement and challenge in an outdoor adventure activity that was the attraction in the first place. The motivational aspects of participation in outdoor adventure activities that feature risk are well documented (see Csikszentmihalyi & Csikszentmihalyi, 1999; Miles & Priest, 1999; Priest & Gass, 2005).

Risk and safety narratives have dominated the practice of outdoor education in Singapore since the 1990s. The emphasis on safety was also fuelled by a number of outdoor activities fatalities that have occurred locally. Most notably, the death of two 16-year-old female students during a school adventure camp programme in February 1999 created a nationwide stir. This resulted in the formulation of the MOE Risk Assessment and Management System (RAMS) framework in 2000, a rigorous documentation process for all outdoor activities conducted by schools. Based on my professional observation as a policy reviewer and leader of the team of officers overseeing the implementation of RAMS from 2005 to 2011, an unintended consequence is the development of a 'risk adverse' culture by school administrators and teachers with many opting to conduct outdoor activities only within the 'safe' walls of the MOE OALCs. Another unintended outcome of RAMS is the 'transfer of risks' by many schools to service providers by getting the latter to conduct the outdoor education programmes for them. This has resulted in most of these programmes taking place mainly on artificially constructed structures, a cost saving measure for the service providers as more staff deployment are needed for excursion outside the Centres.

Risk taking is seen as an integral part of local outdoor education programmes. However, the commodification of risk in the provision of outdoor experiences, such as the use of adventure activities in a challenge course programme, has been critiqued by some outdoor educators as a risk that is manufactured and/or manipulated in a contrived setting (Brown & Fraser, 2009; Loynes, 1998). This contrived nature of some risk-oriented adventure activities has led Brown and Fraser (2009) to conclude that:

Little in the way of growth and learning opportunities is afforded in such artificial situations that in effect, do not require significant

decision-making by the learner, and thus no ownership of consequences.... Participation becomes a zero-sum equation whereby the participant is enclosed by a network of technologies (safety equipment, procedural requirements and predetermined and mechanistic sequencing) which potentially prevent the development of autonomy or resilience by the removal of natural consequences due to the need to manage risk (p. 70).

Wolfe and Samdahl (2005) find that an underlying assumption by many outdoor educators is that the taking up of challenges involving risk will lead to positive outcomes and the learners know how to deal with the risk. Though concepts such as 'challenge by choice' and 'full value contract' (Schoel, Prouty, & Radcliffe, 1988) aim to provide an option for the participants to do an assigned activity, Brookes (2003b) argues that there may be conformist effects in the activity in the form of group norms and the consequences of going against them, as well as the lack of channels for dissent. Brookes (2003b) suggests that even the term 'challenge' is itself loaded - "what kind of person would avoid a challenge?" (p. 59). Perhaps, a critical question outdoor educators need to ask is whether a participant has the ability to recover from a negative experience? D. Berman and Davis-Berman (2002) posit that outdoor trainers may be creating high level of anxiety and pushing participants beyond their ability to cope effectively by intentionally heightening the perception of risk. They question this need to create disequilibrium or a state of tension in such programmes. They believe that people are more likely to respond positively when they feel safe, secure and there is a level of predictability in the environment (D. Berman & Davis-Berman, 2005). Zink and Leberman (2001) also reiterate that the manipulation of risk can cause high levels of stress which may in turn impact negatively on the individual and group. Furthermore, most outdoor educators are not clinically trained to handle the emotional risk of students, especially those suffering from depression, thereby causing harm to them.

This taken-for-granted role of risk taking as a central and integral feature of outdoor adventure education has led to the call by Brown and Fraser (2009) and Beames and Brown (2016) for its re-evaluation as a pedagogical approach. They argue that the pervasive discourse on risk management by outdoor educators has arisen in the

first instance from the assumption that requires participants to be placed in situations of risk if learning is to occur. They suggest that this paradox of focussing on activities which expose the participants to risk and simultaneously applying management strategies to reduce it potentially removes agency and authentic decision-making from the participants. A possible solution is to examine the pedagogical opportunities afforded in outdoor education “by creating situations for students to engage in activities which encourage participants to make authentic decisions, to exercise individual and collective agency, and to take responsibility for their actions” (Brown & Fraser, 2009, p. 73). I support their call for a re-evaluation of our pedagogical approaches and believe that it is timely for us to consider expanding our repertoire of practice and move beyond merely increasing the level of risks to try to improve outcomes as posited by Bunting (1999). One alternative approach proposed by Beames and Brown (2016) is adventurous learning which emphasises the need to provide agency, autonomy, mastery of skills and uncertainty of outcomes in outdoor education programmes through challenges rather than “artificially constructed risk-taking” (p. 8).

As part of the MOE policy-making team for outdoor education as well as an outdoor practitioner, I am concerned with the deliberate injection of risks in some outdoor adventure activities. This is often done without an in-depth understanding of risk and its issues, and their relevance to the activities.

Comfort Zone Model

Another contentious issue is the wide-spread adoption of the comfort zone model, popularised through adventure education literature such as ‘Processing the Experience’ by Luckner and Nadler (1997). The comfort zone theory suggests that individuals can attain personal growth through reaching a ‘growth zone’ when they are compelled to participate in experiences beyond their ‘comfort zone’ in the ‘groan zone’ initially. For Luckner and Nadler (1997), the ‘groan zone’ is the area that feels uncomfortable and unfamiliar. They argue that it is through overcoming the feelings and thoughts of self-doubt and attaining success in the experiences in the ‘groan zone’ that the individuals are able to reach the ‘growth zone’ (Luckner & Nadler, 1997). The ‘growth zone’ is the area where personal growth occurs after

overcoming the 'groan zone'.

Brown (2008a) argues that "the perpetuation of this model which uses risk to promote situations of disequilibrium/dissonance does not find strong support in educational literature" (p. 3). He believes that whilst disequilibrium to some extent may be unavoidable, and may be beneficial for some students on some occasions, the active promotion of disequilibrium necessary for learning as a premise is contestable. He suggests that the use of this model should be reframed as a metaphor for post-activity discussion rather than as a model to underpin the pedagogy of outdoor education. In my work as an outdoor educator for over 25 years with the last fifteen years as a policy-maker and implementer, I observed that this concept of getting the participants 'out of the comfort zone' is a dominant feature of local outdoor education, especially in adventure-based programming. This 'need' to place our students 'out of their comfort zone' has led to the emphasis on extraordinary activities such as challenge ropes course, abseiling and zipline replacing that of 'ordinary' activities such as walking and running. As a result, more efforts are needed to develop the skills of both instructors and participants to manage the risk associated with the activities.

In summary, the preoccupation with notions of risk, challenges and getting out of a comfort zone in outdoor education programmes may not be as effective in achieving the intended learning outcomes as perceived. Furthermore, the deliberate promotion of risk, challenge, and 'out of comfort zone' theories in some outdoor adventure education programmes may lead to a 'denial of place' (see Brown, 2008a; Wattachow & Brown, 2011; Wattachow et al., 2013) where nature becomes merely a backdrop, or worse still, a 'frightening' place filled with obstacles and challenges to be overcome.

III. Commodification of Outdoor Education: Influence of Consumerism and Use of Modern Technology

Due to rapid economic development and affluence, Singapore has transited from a state of material deprivation to material excess with the emergence of a culture of consumerism (B. H. Chua, 1998; C. J. Chua & Tan, 1990). This pervasive culture

of consumerism has impacted on the practice of outdoor education through its commodification. For instance, it is becoming common to see schools organising a climbing session for their students inside the comfort of an air-conditioned indoor climbing wall in a mega shopping mall. There is also a trend towards undertaking more activities like artificial caving, rock and ice climbing, skiing, and surfing previously associated with natural landscapes, in specially constructed indoor settings. These have impacted the opportunities for our students to connect with the natural world. For example, caving, an activity that is traditionally conducted in natural settings, is simulated through the use of several interconnected shipping containers customised and retrofitted in Singapore. Three of the four MOE OALCs are equipped with the latest artificial caving system, completed with technological equipment to monitor movement of students and environmental conditions inside the 'cave'. There is also a mock 'ice-climbing' tower to simulate a mountaineering ascent and an indoor Snow City with a three-storey high 60 metres snow slope in tropical Singapore offering outreach 'outdoor education' programmes for schools. Theme sites such as Snow City, complete with a whole set of recreational and entertainment features including restaurants and shops, pose some challenges to the field of outdoor education. They dissociate outdoor activities from the outdoors (Loynes, 2008) and could also lead to the 'Disneyisation' (Bryman, 2004) in the provision of 'outdoor' experiences (Beames & Brown, 2013, 2016). Bryman (2004) describes Disneyisation as the adoption of the principles of Disney theme parks. He portrays it as globalising force with the principles which Disney theme parks are associated with are spreading around the world.

Four dimensions are identified in Disneyisation (Bryman, 2004, p. 2):

- a. *theming* – clothing institutions or objects in a narrative that is largely unrelated to the institution or object to which is applied, such as a casino or restaurant with a Wild West narrative;
- b. *hybrid consumption* - a general trend whereby the forms of consumption associated with different institutions spheres become interlocked with each other and increasingly difficult to distinguish;
- c. *merchandising* – the promotion and sale of goods in the form of or bearing copyright images and /or logos, including such products

made under license; and

- d. *performative labour* – the growing tendency for frontline service work to be viewed as a performance, especially one which the deliberate display of a certain mood is seen as part of the labour involved in service work.

The potential danger posed by Disneyisation is that “it seeks to remove the consumers’ need for the prosaic fulfilling of basic needs and to entice them into consumption beyond mere necessity” (Bryman, 2004, p. 4). Thus, a potential school trip to Snow City or the themed indoor climbing wall in a shopping mall is likely to include the customary visit to the associated merchandise shops that come with the programme package. Beames and Brown (2013) also argue that sites such as the indoor climbing centre or snow slope are “not neutral space in which ‘context-free’ personal or social development outcomes might be achieved. They shape what is learnt and, in doing so, convey particular messages about what is valued” (p.10). This implies that these sites are not pedagogically neutral. They echo the caution by Tinning (2004) of the diminishing distinctions between education, entertainment and advertising and an increasing influence of ‘corporate cultural pedagogy’ (p. 228) on the lives of young people.

Accompanying the commodification of outdoor education is an increased ownership of modern information technology. For instance, the use of the mobile phone has created a disconnection with place “through reorienting notions of place towards a space orientation that is not rooted in physical locality” (Hales, 2006, p. 58). It has become common to see many people in Singapore caught up with their own created virtual space through their mobile phones even in the outdoors. The increasing use of high technology communication devices such as the mobile phones with its Global Satellite Positioning (GPS) capability have also led to the concern that the seriousness of certain undertakings in the outdoors, which may carry risks, is not given due consideration (Cuthbertson, Socha, & Potter, 2004). This could be attributed to the changed perception of the participants viewing the possibility of a rescue in an outdoor emergency more as a guarantee of safety than as a backup.

There is empirical evidence to suggest that a diminished emotional attachment to the natural environment by humans is caused by the increasing use of modern technology in outdoor recreation (Cuthbertson et al., 2004). As suggested by Strong (1995), technology “insulates one from the conditions of the place, smoothing out even the forbidding ruggedness of the Crazies, narrowing one’s contact with them, and making wilderness an easily consumable package” (p. 93). Cuthbertson et al. (2004) warn that if a goal of outdoor education is to connect with nature, then “the technology filter which adds membranous layers to our direct encounter with the natural world has the potential to work against the actual goal of the outdoor education programme” (p. 137).

IV. Beliefs and Practices of Education for Sustainability in Outdoor Education

Similar to the USA and China, environmental education is not a stand-alone subject in the Singapore education system (Wee, 2008). While it is regarded as a component of outdoor education, the latter traditionally attaches more importance to outcomes such as personal and social education rather than the former (Nicol, 2002b). In Singapore, environmental education is also acknowledged as an aim for outdoor education as shown in this reply by the Senior Parliamentary Secretary for MOE, Mr Hawazi Daipi, to Mdm Faizah Jamal, a nominated Member of Parliament in the Committee of Supply debate in Parliament in March 2012:

Having brought the community into schools, we have also brought our students out to interact with the community and the environment. I agree...that it is important for our students to care for the environment. That is why outdoor education is one of the modules in Programme for Active Learning (PAL) for all Primary 1 and 2 students (Daipi, 2012).

However, whether this is truly a practice in the field remains very much to be seen. My observations of the practice in Singapore in the last two decades suggest that whilst most outdoor educators believe that education for sustainability should form part of the aims in outdoor education, this belief has not been effectively translated into practice. The current practice of education for sustainability is confined mainly

to the rhetoric and some implementation of 'leave no trace' principles and waste reduction in the outdoors. This observation is supported by the exploratory survey study conducted in 2006 on outdoor educators in Singapore by Martin and Ho (2009). They found that whilst the 92 respondents believed in developing an understanding of human relationships and responses to nature, promoting environmental appreciation, and enhancing knowledge of outdoor environments as important learning outcomes, these were ranked well below that of intra-personal, inter-personal and social learning outcomes such as increased personal resilience, self-responsibility, group co-operation and social and communication skills.

The lack of interest in education for sustainability through outdoor education is not surprising given a similar situation in mainstream education in Singapore. A literature search on research publications in environmental education in Singapore schools revealed few findings. This could arguably be a reflection of the lack of emphasis on environmental education in our schools. Wee (2008) points out that while Singapore has one of the highest literacy rates in the world (92.5%), there is almost no data on Singaporeans' levels of environmental literacy which is defined as the ability to understand and solve local and global environmental problems. In a local study of 1,603 school students between 15 to 16 years of age in 1996, Lily Kong and Yee (2002) found that even though the students possessed a relatively high level of knowledge on the environment, the form of knowledge they received (relatively more from the mass media rather than the schools) is 'book' knowledge. The researchers, hence, posited that:

What is lacking in the students is the kind of practical knowledge that can transcend what they know into actions; i.e. the different kind of things they can possibly do other than recycling to preserve the environment; the activities that are related to local civic tasks or actions, in which a certain level of socio-political consciousness is needed. (p. 90)

They also highlight that the lack of discussion about social justice issues in the school system, and generally in society, may possibly explain this phenomenon. They conclude that while environmental education has been successful in terms of

providing the factual knowledge to students, there is a tremendous gap in providing the impetus for students to actively participate in the preventative measures of environmental degradation, at both the personal level and societal level.

In another study of 1,256 secondary three and junior college year one students in Singapore, I. G.-C. Tan, Lee, and Goh (1998) report that whilst the students have high levels of environmental knowledge scores and moderately positive attitudes towards the environment, such positive attitudes may be a 'learned response'. They also found a weaker consensus on a group of items related to the relationship of people with nature. The researchers attribute this to the minimal contact that the students have with nature and thus reiterate the need for environmental activities to be designed to incorporate the affective domain. Similarly, L. Kong, Yuen, Sodhi, and Briffett (1999) found in a series of focus group interviews that Singaporean youths had "little interest in and affinity for nature" (p. 12). They suggest that environmental education in Singapore schools has not been successful as the curriculum and instruction is geared typically toward performance outcomes in high stakes standardised examinations. They allude that since environmental education is neither a stand-alone nor exam subject, it makes little sense for teachers to devote time for it. The apparent lack of interest and affinity for nature in Singaporean youths is worrisome. However, it reinforces the view by Suzuki (2003) that:

Throughout the history of our species, human beings have understood that we are a part of nature, in which everything is connected to everything else and nothing exists in isolation... Today it's difficult to recognize our continuing connection and dependence on nature (p. 10).

I posit that as educators, there is a need for us to address this lack of affinity with nature in our young through outdoor education. This is especially so when we are currently living in a challenging and rapidly changing world where issues of global warming and its inter-related issues of environmental degradation, poverty, hunger and inequality, is surmounting. Increasing links between more localised weather events such as the common occurrence of floods, climate change and global warming have also been established by scientists as highlighted in the Intergovernmental Panel for Climate Change (IPCC) report in 2012.

In view of these issues, there have been increasing calls by many researchers (see for example: Cooper, 1994, 1998; Cosgriff, 2011; Higgins, 1996, 1997; Higgins & Kirk, 2006; Higgins & Loynes, 1997; Martin, 2004; Nicol, 2002a, 2002b; Wattchow & Brown, 2011) for outdoor education to develop and implement practices that value the natural environment and encourage sustainability. As members of the international outdoor education community, these pressing global issues cannot be ignored in Singapore.

Outdoor educators in Singapore arguably need to include environmental (eco) literacy as part of the responsibility of our profession. I believe the adoption of a well-designed place-responsive pedagogy in outdoor education can contribute to this cause by developing a sense of identity to the place and community within it through repeated engagements over a period of time. We cannot care for what we don't know. Hence, forging a sense of identity in places (both urban and natural) through repeated visits and crafting of meaningful outdoor activities that is place-responsive will increase the chances of developing an ethic of care for not only the place but the community that lives within it.

V. Inadequate Professional Development of Teachers in Outdoor Education

Singapore does not mandate any formal teaching qualifications in outdoor education in schools. This is in contrast to some countries such as Australia, for example, where some states such as Victoria has mandated that an outdoor education teacher should have a minimum of one-year equivalent of approved study of outdoor education within their four years of tertiary study (Martin, 2008). This one-year equivalent could consist of units within a degree, include part of a Diploma of Education, or be a one-year Graduate Diploma of Outdoor Education. This lack of formal requirement in qualification for teaching in outdoor education has resulted in vast differences in its forms, standards, and mode of delivery. For instance, the adoption of outdoor education concepts and practices somewhat uncritically from the UK, USA and Canada in spite of the significant historical, geographical, social

and cultural differences of Singapore from these countries has been observed in our schools (Ho, 2011).

Outdoor education is not a stand-alone or exam subject in Singapore. Only recently has it been included in the formal curriculum in schools. Its development is traditionally assigned to the team of PE teachers in schools who are usually tasked to design and implement programmes such as camps and adventure-based trips. This can be problematic as it is typically based on the assumption made by the school administration that PE teachers will make effective outdoor educators since they spend a considerable amount of time teaching outside the classroom. Both the primary PE and classroom teachers are also involved in the outdoor education module in PAL for the primary one and two pupils. Atencio et al. (2014) found in their work as researchers based in schools on PAL that the primary classroom teachers are often unprepared to develop and guide outdoor education lessons on their own. They contend that more extensive training and professional development are required for these teachers to teach effectively in this area.

As highlighted previously in Chapter Two, two organisations, MOE and OBS spearhead the development of outdoor education in Singapore. OBS conducts professional development courses for outdoor educators mainly in the areas of safety and risk management, outdoor first aid, and technical outdoor skills training in challenge ropes course management, rock climbing, abseiling, and kayaking. For MOE, two bodies have been set up recently to oversee the professional development of physical education and outdoor education teachers specifically. The Physical Education and Sports Teachers Academy (PESTA) and the Physical, Sports and Outdoor Education Branch (PSOEB) cater to the professional development of PE, sports and outdoor education teachers. PESTA and PSOEB fund the professional development and training including workshops, and local and overseas conferences. Besides these two MOE set-ups, two non-profit voluntary organisations are also involved in the professional development of PE and OE teachers independently. They are the Singapore Physical Education Association (SPEA) and the Outdoor Education Association Singapore (OEA). Both the SPEA and OEA organise professional development for their respective professions. However, except for the case of the OEA which provides professional development courses for all outdoor

educators including non-PE teachers, the other establishments cater for the professional development of only certified PE teachers.

The professional development courses offered by the PSOEB are typically in the technical skills, safety and risk management aspects. Prior to 2011, the biennial Outdoor Education Conference organised by the MOE OE Section caters to both PE and non-PE teachers as well as external service providers as a means for all those involved in outdoor education to stay up-to-date with current theories and practice in the field. However, with the restructuring of the MOE and subsequent formation of PSOEB in 2011, this biennial Outdoor Education Conference was discontinued. In replacement, outdoor education is included as a strand in the biennial Physical Education and Sports Education Conference organised jointly by PESTA and PSOEB since 2013. Though this conference is fully subsidised by MOE for PE teachers, it is only open to the PE profession only. I believe that this change is not conducive for the development of outdoor education as it seems to endorse the perception that it is solely the purview of PE teachers, a notion that may not be congruent with its multi-disciplinary scope of practice.

VI. Shortage of Outdoor Education Research in Singapore

Research on outdoor education curriculum and pedagogy in Singapore schools is lacking. Yeong (2012) posits that “despite being an increasing noticeable pedagogical alternative in Singapore, there was little, or in fact no known writing to represent the entirety of the outdoor education scene” (p. 42). Prior to 2014, there were only five published journal articles on outdoor education programmes in Singapore. Three of the publications by Gassner and Russell (2008), C. K. J. Wang et al. (2006), and Chee Keng John Wang, Ang, Teo-Koh, and Kahlid (2004) focused specifically on quantitative outcomes measures of participation in Outward Bound programmes. The fourth publication by Martin and Ho (2009) examined teachers’ conceptions of outdoor education, and the fifth by Ho (2013) studied the potential functions, roles and purposes of outdoor education.

From 2014 to 2016, five additional papers on outdoor education in Singapore were published. One article by Ee and Ong (2014) illustrated the outcome of a social

emotional learning camp organised for 93 secondary two students in a Singapore school. The second article by Atencio et al. (2014) described the potential contribution of outdoor education in light of the recent curricular reforms. The article highlighted the need for adequate professional development of teachers to enhance their capacities to teach in the outdoors. Another paper by Atencio et al. (2015) explored the pre-service PE teachers' conception of outdoor education through a survey questionnaire (n =120) and semi-structured interviews (n=14) and found that it is predominantly situated in a residential camp environment.

Atencio and Tan (2016) found in their study that PE teachers prioritised adventure activities and challenge course elements in residential camp over place-based learning. The PE teachers also have limited understanding of the concept of place-based learning. The study by Y. S. M. Tan and Atencio (2016) examined in-service PE teachers' perception of place-based pedagogy in outdoor education in the Singapore context where 84 and 14 in-service PE teachers completed the questionnaire survey and an in-depth interview respectively. Similarly, they found a lack of understanding by the teachers on place-based pedagogy.

As could be surmised, little is known about what the values and beliefs that underpin teachers' practice and how outdoor education is conducted in Singapore schools. The lack of published research in outdoor education pedagogy in Singapore is a concern as it may well reflect a knowledge gap between theory and practice. This needs to be addressed if this field is to develop understanding of various pedagogical approaches that can inform best practices.

The Future of Outdoor Education in Singapore

As argued in the previous sections of this chapter, current Singaporean outdoor education practices with emphasis on adventure activities fail to take into account rapid changes in the external landscapes. The negative impact of consumerism and marketisation of education brought about by globalisation and technological advancement has raised the concern of the perpetuation of the dominant culture of individualism. This culture of individualism may lead to ignorance of the pressing issues of climate change, poverty, and social injustices. In the next section, I will

review the literature on the potential of a place-responsive pedagogy to address some of the shortfalls in our current practices in order to better prepare our students to think globally and act locally.

Place-Responsive Outdoor Education as an Alternative Pedagogy

Place as a Concept

According to Agnew and Duncan (1989), the word ‘place’ has multiple meanings that could mean a “portion of space in which people dwell together”, temporal ordering (“took place”) or “position” in a social order (“knowing your place”) (p. 1). It may also refer to “a specific concrete setting – Singapore – a state in South East Asia, the home for Singaporeans or a site which lies somewhere in between state and home at the intersection of collective histories and individual biographies” (Yeoh & Kong, 1996, p. 52). Entrikin (1991) suggests that places are socially constructed sites within the context of a particular period, that is, they have meaning only in relation to goals and concerns of the individual or group. Rather than being in an inert or ahistorical form, place may be thought of as a process of becoming, where people are active participants in the historically contingent process of the making of place. Individuals construct places by investing them with human meaning within the context of their times (Yeoh & Kong, 1996). Hence, if place is both a specific concrete setting as well as a socially constructed image, then it is as described by Daniels (1989) as both “a way of life” and “a way of seeing” (p. 206). Place is an active site that is linked inextricably to the lives, movements and activities of individuals and is therefore, a location of collective experiences which “evokes and organises memories, images, feelings, sentiments, meanings and the works of the imagination” (Walter, 1988, p. 21). Thus, Teo and Huang (1996) are of the view that places “are not abstractions or concepts but are directly experienced phenomenon of the lived world” (p. 310). Moreover, as alluded by Casey (1997):

The more we reflect on place, however, the more we recognise it to be something not merely characterisable but actually experienced in qualitative terms. Sites may be bodiless-it entails a disembodied overview, a survey- but there can be no being-in-place except by being

in a densely qualified place in concrete embodiment. Indeed, how can one be in a place except through one's own body? (p. 204)

Harvey (2001) posits that place is bound up in the individual's sources of meaning and experience and places and identities are mutually constructed and constituted. The idea that human identity is somewhat tied to place "has a long ancestry over the centuries and a wide currency across cultures" (Malpas, 1999, p. 20). For example, the aboriginal Australians and Maori of New Zealand have a conception and belief that all life, including human life, are inextricably bounded up with the land and is connected to it as a source of identity (Malpas, 1999). Convery, Corsane, and Davis (2012) also quote the general consensus of various authors that "the relationship between people and place is important for individual and community identity" (p. 1). In support of this, Greenwood (2013) states that as centres of experience, places teach and shape the formation of our identities and relationships. It is evident, thus, that people form bonds with place and this attachment may serve as an integral element of self-identity (Storey, 2012). However, Cameron, Mulligan, and Wheatley (2004) claim that the inbuilt institutions of society tend to primarily "regard place as a site for economic development or as a commodity for real estate trading" (p. 158). Hence, a study of place may be seen as vital to reconnect our young to their land. Places, according to Gruenewald (2003), are profoundly pedagogical.

Linked closely to the study of place is the concept of a 'sense of place'. This concept has been explored by different disciplines drawing upon different and at times conflicting theoretical and methodological traditions (Convery et al., 2012; Kudryavtsev, Stedman, & Krasny, 2012). Sense of place is often used to refer to multiple conceptualisations of place (Kudryavtsev et al., 2012; Shamai & Ilatov, 2005). However, the lack of a clear definition has led some place researchers to argue that it is an incoherent concept (Stedman, 2003). Two broad differences have been observed by Convery et al. (2012) in the use of the term 'sense of place' in academic literature. The first, 'sense of place' or 'genius loci' comprises of a range of factors which include the topographical, cosmological, and spiritual; the built environment, and people's emotional and psychological engagement with the place. Together, these factors define the distinctive character of the place. The second

application of ‘sense of place’ emphasises the ways in which people experience, use and understand place which lead to the range of conceptual subsets such as ‘place identity’, ‘place attachment’, ‘place dependence’ and ‘insiderness/insidedness’ (Convery et al., 2012; Kudryavtsev et al., 2012).

Place-Based Education and Place-Responsive Pedagogy

Place-based education could be considered as both an old and new phenomenon. Before the invention of the common school, all education was place-based Gruenewald and Smith (2008). Modern practices of education have severed this tie to the local place (Arenas, 1999; Gruenewald & Smith, 2008). Several place-based education authors such as Knapp (2008); Gruenewald (2003); Smith (2002); Sobel (2005); and Woodhouse and Knapp (2000) have acknowledged a variety of other descriptive forms of place-based education: community-based learning, service-learning, environment as an integrating concept, environment-based education, and outdoor education.

In a review of the book *‘A Pedagogy of Place: Outdoor Education for a changing world’* by Wattchow and Brown (2011), prominent place-based educator, Greenwood (2013) reveals that “as someone who does not identify as chiefly working in the field of outdoor education, it was somewhat surprising to read how this subfield of education has often neglected local cultural and ecological contexts as it has become professionalised” (p. 454). He laments the lack of attention that is paid to place not only in the field of outdoor education but also in all branches of education in general. Arenas (1999), Baker (2005), Beames, Higgins, and Nicol (2011), Hill and Brown (2014); Payne and Wattchow (2008); Stewart (2004); and Wattchow and Brown (2011), amongst several outdoor educators, have reiterated the importance of teaching about places and local landscapes in education. According to Orr (1992), John Dewey, often cited as one of the modern founding fathers of the experiential education movement, had proposed the idea in an 1897 essay that place could be a significant educational tool, when he called upon educators to “make each of our schools an embryonic community with types of occupations that reflect the life of a larger society” (p.127). A premise of pedagogy of place is that “children cannot comprehend, much less feel a commitment toward,

issues and problems of distant places until they have a well-grounded knowledge of their own place” (Arenas, 1999, p. 1).

Wattchow and Brown (2011), writing from the Australia and New Zealand contexts, posit that the effects of modernity have diminished our ability to respect and care for our local places as well as places we encounter when we travel. Similarly, Baker (2005) contends that the lack of contact with the land has resulted in the loss of the people’s collective awareness and admiration for it in the United States. I believe the situation is similar in Singapore. For instance, few people would have known about green places in Singapore such as Chek Java, Bukit Brown, and the old Jurong railway line if not for the publicity generated by the media. Arguably, if they do not know about the importance of these places in terms of their natural heritages and rich biodiversities, there is little likelihood of them identifying and subsequently caring for and preserving these places.

Orr (1992, p. 130) believes that a study of place will educate people with “the art of living well where they are” and enable them to reflect deeply on their relationship and the balance between mobility and rootedness to their own places. In advocating for a pedagogy of place to produce ‘good inhabitants’, he made the distinction between the ‘inhabitant’ who has a detailed knowledge, intimate and mutually nurturing relationship, and a sense of care and rootedness with a place as compared to a ‘resident’ who is merely a temporary occupant who knows and cares little for it. He further posits that inhabitants are less likely to vandalise their or other places. In support of this view, (Gruenewald, 2008) argues that place is essential to education as it provides educators with a concrete focus for cultural study and expands the cultural landscape to include related ecosystems, bioregions, and all the place-specific interactions between the human and the more-than-human world. He suggests two fundamental goals in adopting a critical pedagogy of place: ‘decolonization’ through a cultural responsive teaching “to undo the damage done by multiple forms of oppression”; and ‘reinhabitation’ to “learn how to live well together in a place without doing damage to others, human and non-human” (Gruenewald, 2008, p. 149). Rachel Carson (1965) in her book *‘Sense of Wonder’* also postulates that first-hand experiences of our children with the natural phenomenon in various places will contribute to their emotional connection with

the world.

Understanding and teaching about place is important as the underlying assumption behind place-based education is that direct interaction with ‘place’ will foster an appreciation of, and a broad ethic of care for the land and its inhabitants (Beames et al., 2011). Moreover, Percy-Smith and Malone (2001) believe that the “value of local place experiences for children goes beyond issues of place, use and provision, yielding also potential opportunities for developing a sense of belonging, identity, self-worth and advocacy as fellow citizens within neighbourhood communities” (p. 18).

Some researchers suggest that developing a connection to place is an essential element in getting to know and care for the environment (Cachelin, Rose, Dustin, & Shooter, 2011; Vaske & Kobrin, 2001; Williams & Vaske, 2003). Lugg (2007) and Hill (2008) argue that it is when the connection to place and community become more of a central focus in outdoor education programmes and experiences that our ability to educate towards a sustainable future will become more viable. In support of this view, Rose and Cachelin (2014) posit that developing and maintaining a deep sense of place is vital for the understanding and appreciation of our interactions with the non-human worlds from a sustainability perspective. They claim that outdoor educators are in many ways good at turning space into place by adding experience and helping their students generate personal meaning from their outdoor experiences. Drawing upon an eco-justice and sustainability theoretical framework, Hill (2008) further argues that “connection to place and community are fundamental parts of a sustainable outdoor education paradigm” (p. 26).

Beatley and Manning (1997) also maintain that developing a sense of place is an important dimension of sustainability and that many people have little attachment to place largely due to the demolishing of those community features that have provided meaning in our everyday lives. Hence, to foster a sense of place, there is a need for communities to nurture built environments and settlement patterns that are uplifting, memorable and engender a special feeling of attachment and belonging.

Pyle (2008) advocates that place-based learning must foster the experience of nature as an everyday act for:

Without such experiences, people are at risk of the profound illiteracy of not knowing how to name, and not knowing how to care for, the life around them. If place-based education focuses only on human communities, it will do little to rectify the disharmony that currently threatens the integrity of the natural systems and our own well-being (p. 136).

I support the position of Pyle (2008) and believe that outdoor educators have a fundamental duty to address the disharmony between the human and non-human world through a more place-responsive practice. Beames et al. (2011) contend that “students in highly urbanised areas are just as able to learn about ecology as their counterparts who live in the country” (p. 43). They point to the infinite opportunities even in big cities for the learning of other natural living things that exist within the surroundings of our ‘unnatural’ places and concrete jungle. Moreover, there are still pockets of green areas found in various parts of Singapore that are rich in cultural, historical and natural heritage. Gruenewald (2008) believes that place-conscious education also has the potential to promote diversity and cultural competence amongst the students. A special characteristic of place-responsive pedagogy is that it compels teachers to become creators of the curriculum rather than as a dispenser of curriculum that is developed by others as each place is different with its unique characteristics. Place-responsive pedagogy can also be learner-centred as an aim is to provide ample opportunities and flexibility for the students to create their own learning through to the inquiry and problem-solving approaches that are commonly employed.

Potential Role of Place-Responsive Pedagogy in Achieving the Three Broad Goals of Outdoor Education

There is a critical need for the field of outdoor education to rethink its relevance in this rapidly changing landscape. In view of its narrow focus with attention overly placed on adventure pursuits and personal development, some international outdoor educators have called for a change (see for example: Brown, 2012a; Hill, 2010;

Irvin, 2008a; Straker, 2008; Wattchow & Brown, 2011). They suggest a re-positioning of adventure activities alongside cultural and environmental imperatives, developing contemporary narratives of place, building relationships with the local environments, and challenging the ongoing Western perspective of nature/culture and the self/environment dualism.

Irvin (2008b) further argues for a reconceptualisation and reframing of outdoor education practices in schools, outdoor centres and the tertiary centres. One alternative approach is place-responsive pedagogy. There are some studies that have found benefits through a place-based approach in the delivery of outdoor education. Sibthorp, Paisley, Gookin, and Furman (2008) suggest that a beneficial principle of the design of place-responsive approaches is the provision of student autonomy which is a student's belief that he or she has some sense of meaningful control over his/her choice. They found in their study that developmental outcomes are related to participants' perceptions of autonomy and the autonomous student expeditions provide students with the meaningful and authentic opportunities to experience autonomy during adventure education programmes.

Wattchow and Brown (2011) suggest that current outdoor education practice might result in the experience of displacement or rootlessness similar to the effect of the homogenising influence of modern practices of agriculture, engineering and architecture as described by Relph (1976). In contrast, place-based learning has the potential to contribute to the forging of a sense of identity at both individual and collective level (Nicol & Higgins, 1998). The formation of identity and a sense of authenticity does not occur in a social or cultural vacuum (Weigert & Gecas, 2005) but are inextricably bound up and shaped by both our individual and broader social group's interaction with our places (Gentry & McLean, 2006). Brown (2008b) posits that "while identity is constructed and reconstructed through interaction; the physical, social, and cultural contexts and discourses enable and constrain the possibilities for identity formation" (p. 13). Place literature has alerted us to the significance of the lived experience of place in forging an individual and collective identity, and the role of place as a source of identity tends to be overlooked in outdoor education pedagogy (Wattchow & Brown, 2011).

There is also value in terms of cost saving in focusing on place-responsive learning nearby. Studies have not found any conclusive evidences of any transformative power of an outdoor education experience in faraway places on the participants' application of environmental ethics and behaviour in their home environments (Cachelin et al., 2011).

In the Singapore context, Yeoh and Kong (1996) express their concern over the increasing trend of Singaporeans losing their sense of history and place. This is attributed in part to their finding that few people in Singapore stayed long enough in their places to develop deep relationships. The concern here is that the placeless or rootlessness in young people may impact on their identity and relationship with the world around them. They suggest that “there is no history without place, and no place without history; to lose sight of one would be to lose sense of the other” (Yeoh & Kong, 1996, p. 62). I believe that schools in Singapore can play a bigger role in developing a sense of place through fostering a love and connectedness to our local places. This could potentially be achieved through the adoption of a more place-responsive approach within the curriculum. This belief is reinforced by the findings by Brown (2012b) of student perspectives of a place-responsive outdoor education programme in a high school in New Zealand. He found that this approach is a viable form of practice that has the potential to foster participants' inter-personal relationships and strengthen their appreciation of and attachment to local places. He posits that if outdoor educators are aware of the importance of place, it will encourage the development of programmes that respond to the uniqueness of the locality and the community where the learning takes place.

Furthermore, as a young nation, Singapore has yet to develop a common identity and it will take a long time before a unique identity can emerge, according to former president, S.R. Nathan (Siau, 2012, March 18). One way to foster a sense of common identity among students could be through developing a love and attachment to local places and communities through planning for more curriculum time spent in our locales. A place-responsive pedagogical approach in outdoor education can potentially enable the students to know who and where they are through an active engagement with the places and communities whilst utilising meaningful and contextualised outdoor activities (Wattchow & Brown, 2011).

In Our Singapore Conversation survey, conducted from 2012 to 2013 as part of the year-long effort to engage Singaporeans of all walks of life in a National Conversation, 54% of Singaporeans expressed a preference for preservation of heritage spaces over infrastructure, and 62% expressed a preference for preservation of green spaces over infrastructure (Ministry of Communications and Information, 2013). An earlier Heritage Awareness survey done by the Singapore Heritage Society also found that 90% of the Singaporean respondents agree that preservation of heritage would become more important as Singapore becomes a global city. The adoption of a place-responsive pedagogy can contribute to the efforts in educating our young to sustain both our green and heritage places. Potentially, this will make a significant contribution to the achievement of the character and citizenship education, civic literacy and the global awareness aims of our 21st Century education goals. A place-responsive outdoor education pedagogy embedded within the curriculum has the potential to also transform our practice to achieve the desired outcomes of education that include developing students who are concerned individuals and active contributors in finding solutions to both local and global issues.

Place-Responsive Pedagogy and Outdoor Adventure Activities

Despite the recent trends to incorporate place-based pedagogies as part of outdoor environmental education in adventure programmes, some outdoor educators have warned of a tension between adventure activities and education for sustainability. For instance, Lugg (2004) asserts that the practice of outdoor education in Australia is shaped by tradition from the northern hemisphere and there is an absence of robust educational rationales in conducting some outdoor adventure activities in light of the emphasis on outdoor environmental education. Preston (2004) also raises a concern that some adventure activities such as rock climbing and water paddling encourage participants to focus their attention on the activity and themselves rather than the place. Aldo Leopold, an ecological philosopher, warned of the danger of most outdoor experiences becoming a destructive process in terms of building relationships with nature and not moving towards a consciousness of land (Wattchow, 2007).

In contrast, a study by Martin (2004) concluded that de-emphasising the outdoor skills and adventure experiences through increasing the environmental focus of outdoor education could lead some students to hate their experience in nature. He asserts that without the challenge and fun which accompanied the adventure experiences in the natural environment, the desire to develop connections with places would be reduced.

Greenwood (2013) asks an important question of “what constitutes the outdoors in outdoor education?” (p. 457). I believe this question is relevant for outdoor educators in Singapore to reflect on critically as well. While a strong case has been put forward by an increasing number of outdoor educators internationally for a more responsive outdoor education (see for example: Baker, 2005; Beames et al., 2011; Hill, 2013; Ho, 2013; Stewart, 2008); perhaps it is timely for outdoor educators to ponder this important question posed by Greenwood (2013).

Summary

Outdoor education in Singapore schools has arguably adopted uncritically the philosophical underpinning, structure and form of practice from the USA and UK. The emphasis seems to lie more in doing the activities and personal development than in the process of learning. This over-focus on activities and personal development has led to a lack of attention paid to place and the natural environment. As posited by Beames et al. (2011, p. 40), this kind of learning that takes place outdoors, but pays little attention to place, is ‘universal’, as “the activities can take place just about anywhere”. Brookes (2002) suggests that rather than outdoor programmes treating outdoor places “as empty sites on which to establish social or psychological projects” (p. 405), more focus could be paid to the details of the experience, the importance of the location, and what that experience means in the context of students’ lives. The intent here is not to devalue the current form of outdoor adventure programmes which may still serve an educational purpose. Rather, it highlights the need for us to critically reflect and review our current practice of outdoor education to consider complementary and/or alternative pedagogies to widen the scope of our practice in our efforts to develop our students

holistically. My personal and professional observation over the last two decades suggest that our current fixation on doing most of our adventure-type activities utilising artificial structures have resulted in fewer opportunities for the students to be in touch with natural environments. I believe that moving towards a more place-responsive pedagogy will go some way to re-set the imbalance in the current provision of outdoor education. Furthermore, there is an imperative need for us to heed the call by an increasing number of outdoor educators globally to pay more attention to the details of the experience, the importance of the location (place) and what the experience means in the context of the students' lives. More importantly, with the pressing issue of global warming and its inter-related issues of environmental degradation, poverty, hunger and inequality, it is imperative for us as outdoor educators to do our part to help prevent our educational system from heading "away from, rather than toward, an intense consciousness of land" (Leopold, 1987, p. 223). Focussing on a more holistic outdoor educational experience that not only utilises adventure activities in local outdoor places to meet the intra and inter-personal outcomes for our students but also to enthuse, engage and enable them to 'respond' to these places is one way we can help empower our young to take concrete actions for a more sustainable future even as they develop the competencies needed to meet this future. It is timely for us to move towards a form of outdoor education that is more sustainable and also responsive to the places we are practising in to help our students to develop their collective identity as Singaporeans and develop a rootedness to their country through an active re-connection with their own places.

Locally, place-responsive pedagogy in outdoor adventure education is not an entirely new approach. Whilst it is not commonly seen in practice, some outdoor educators have been utilising similar approaches through ecological literacy programmes, service-learning projects and journey-based outdoor programmes employing slow pedagogy, etc. The challenge is to get more schools to experiment adopting a more place-responsive pedagogy in their programmes, which is the aim of this research project. Lessons learned from the schools in adopting a place-responsive pedagogy can then be shared with other schools for their implementation. This can be achieved through empowering agency (teachers and students), and enabling structure (resources) to support this pedagogy.

Chapter Four: Methodology

Introduction

This chapter describes the methodology employed in the study. I detail the use of structuration theory by Giddens (1984) as the theoretical interpretive framework to guide in data analysis and interpretation of my findings. Next, I outline my research philosophy that informs both the research questions and the methods of data collection and analysis. It includes my axiological, ontological, epistemological, and methodological beliefs I adopt in the study. I also provide a brief description of qualitative educational research. This is followed by an explanation of the multiple-case study approach employed as my main strategy of inquiry. Lastly, I describe participatory action research which was adopted during phase two of the study.

Structuration Theory as a Theoretical Interpretive Framework

In order to answer the five research questions posed in this study, it is essential to examine the elements which impact upon the teachers' knowledge, beliefs and practices in outdoor education. These elements include the human actors and the social structure the teachers are operating in. The human actors, in this case, refer to the teachers, administrators, and researcher. Examples of social structure include the schools, resources, and places of learning. It involves understanding how the actions of the teachers produce and reproduce the school's norms, rules and culture and how these influence the practice of the teachers.

Structures (rules and resources) and agency (human action) have been viewed conventionally as separate phenomena in the sociology of education (Stones, 2005). This structure-agency dualism has constraints in the investigation of social practices as reproduced by knowledgeable individuals (Shilling, 1992). Giddens (1984) structuration theory is a way of looking at the relationship between social interactions and the reproduction of the major structural principles in educational settings which characterise society (Shilling, 1992). A distinctive feature of this theory is that it emphasises both structures and agents rather than to give "a priori primacy to one or the other" (Stones, 2005, p. 4). The educational settings in this

study include both the schools and the places of learning (inside and outside school); all of which carry a variety of social expectations and meanings. In order to understand how the knowledge, beliefs and practices of the teachers influence and are influenced by these structures and places of teaching and learning, I have chosen to adopt Giddens' structuration theory to explore the interaction of teachers (agents) and social structures. Cassidy and Tinning (2004) believe that this theory can provide researchers "with a sophisticated explanatory framework that enables a focus, not only on the way the actions of individuals are influenced by structural factors, but also on the way structural factors are in turn constituted by these individuals" (p.177). Giddens (1990) also suggests that the concepts of structuration theory can be used "as sensitising devices for research purpose" or as helping to "provide an explication of the logic of research" (pp. 310-311). This view is supported by Edwards (2013) and Gough and Gough (2016) who believe that this theory is a valuable framework that can contribute to the development of new understandings in the field of educational research.

A literature scan indicates that structuration theory has been adopted in many published research studies in a variety of disciplines including communications studies, engineering geography and social science, health and medical science, information technology, and management studies (see for instance: Ashraf & Uddin, 2015; Bakewell, 2010; Gynnild, 2002; Hoffman & Cowan, 2010; Phipps, 2001; Seyfarth, 2000; Wheelers-Brooks, 2009). In education, BurrIDGE, Carpenter, Cherednichenko, and Kruger (2010) adopt it to investigate praxis inquiry within pre-service teacher education. Cassidy and Tinning (2004) use it in an attempt to understand the relationship between the message intended and the message received in teacher education. In adventure sports, Beedie (2013) adopts the theory "as a theoretical lens to more clearly understand the complex social world of mountaineering" (p. 88). Gough and Gough (2016) identify that this theory as an approach to research has only been partially established in the field of education with little influence on outdoor and environmental education. Thus, this study seeks to contribute to the application of structuration theory in the educational domain by developing a clearer understanding of outdoor education practice in Singapore schools.

Structuration Theory

Anthony Giddens (Giddens, 1979, 1984) formulated his structuration theory in an effort to overcome what he perceives as the limitations of the subject/object dualism espoused in the two branches of interpretive sociology and structural sociology. He believes the theoretical dualisms such as agency/structure, micro/macro, and qualitative/quantitative methodological approaches in sociology and social sciences have prevented them from attaining a better understanding of the social world (Tucker, 1998). Thus, Giddens' (1984) theory of structuration aims to overcome such theoretical dualisms through his concept of the interdependency of both agency and structures via the duality of structure.

Duality of Structure

As he describes in his seminal work on structuration theory in the 'Constitution of Society', Giddens' concept of the duality of structure links human actions with social structures (Giddens, 1984). He posits that it is individuals and institutions that create society and at the same time are created by it (Giddens, 1979). Human actions and interactions create social structures, and those structures influence the actions and interactions of the individuals. It implies that a mutual interdependency exists between agency and structure. This concept of duality or non-binary is central to structuration theory. To Giddens (1984), "the structural properties of social systems are both medium and outcome of the practices they recursively organise" (p. 25).

At this juncture, it is necessary to dwell in-depth on the specific elements of structuration theory such as agency, structure, power, and modalities within the duality of structure to gain a better understanding of the theory that can inform the interpretation of the field texts collected in this study.

Elements of Structuration Theory

Human Agency

A closer examination of the notion of human agency or the nature of human social action is vital to the quest to understand how and in what ways the teachers' knowledge, beliefs and practices in outdoor education are shaped over time and space. Giddens positions human agency as key to understanding social change. Agency refers to the capability of the agents (humans) of doing things, not their intentions to do them. Agency is thus seen as the capacity to act. This view of agency implies power and to Giddens (1984), an agent is "one who exerts power or produces an effect" (p. 9). He regards human agency or action as "a continuous flow of conduct" and "not a series of discrete acts combined together" (Giddens, 1979, p. 55).

There are two perspectives to the notion of human agency. The first is the objective social perspective which views human agency as responses to factors that are external to the individual such as social discourses or written and unwritten laws (Arts, 2000). Humans lack agency in that there is no conscious choice in their actions (Loyal & Barnes, 2001). On the other hand, the subjective social perspective regards human agency as the unrestrained will of humans to act freely with their personal preferences and motivations directed by their values, attitudes and moral ideals (Gynnild, 2002). The subjective social perspective suggests that there is independency of humans to act or oppose structural constraints (Loyal & Barnes, 2001).

According to Arts (2000), efforts to attribute human agency to either objective or subjective factors unilaterally will not adequately cover the scope and complexity of social phenomenon. This objective-subjective dualism provides little insight into the many critical motivations and overriding characteristics of human actions. Thus, Giddens' notion of agency rejects this objective-subjective dualism of human agency and acknowledges both the interaction of objective and subjective factors in determining human actions as well as interpreting these actions. It should be noted, however, that these objective and subjective factors are not necessarily

discrete and definable entities (Edwards, 2011). The interactions between the objective and subjective factors are complex, continuous and dynamic in most contexts (Cohen, 1989). The implication of this for social practices is that any attempt to determine the degree to which multiple objective and subjective factors interact to influence any specific human action will be very difficult (Edwards, 2011). Nonetheless, seeking to understand the ways in which the objective and subjective factors influence the teachers' knowledge, beliefs and practices in the design and implementation of a place-responsive pedagogy will be useful in answering the research questions in this study.

The notion of the ecological view of agency by Biesta and Tedder (2007) is also a useful concept in understanding the influence of the ecological conditions on agency attainment. According to them, though individuals may have their capacities, whether they can attain agency will depend on the interaction of these capacities and the particular ecological conditions they are operating in. Hence, it is not just the capacity of the individual to act but also the environment within which the action occurs that will determine agency. In this study, the introduction of a place-responsive pedagogy is dependent upon not only the teacher-collaborators' capacity and willingness to act on the pedagogical change but will also be influenced by the work and school environments they are operating in.

Emirbayer and Mische (1998) suggest that there is a temporal aspect to agency. In this aspect, agency can potentially develop over time through a continual process of engagement and emergence (Priestley, Edwards, Priestley, & Miller, 2012). The capacity of agency to emerge occurred as the individuals interact with the social, practical and natural worlds (Archer, 2000). "Hence, people's potential for agency changes in both positive and negative ways as they accumulate experience and as their material and social conditions evolve" (Priestley et al., 2012, p. 197).

Knowledgeability and Levels of Consciousness

Structuration theory arose from Giddens' (1984) discontent with a good deal of social theories such as structural sociology that treated human agents "as much less knowledgeable than what they are" (p. xxx). Hence, a key premise of structuration

theory is that humans are reflexive and knowledgeable agents. Giddens positions the agents (individuals) as reflexive, and able to monitor day-to-day activities or what he terms as the *duree* of social practices (Dinah-Thompson, 2001). For Giddens, “continuity of practices presume reflexivity, but reflexivity in turn is possible only because of the continuity of practices that makes them distinctively ‘the same’ across space and time” (1984, p. 3). As a reflexive person who is able to monitor his/her daily activities, the agent produces and reproduces social practices by acting upon structures. This represents the recursive ordering of social practices (Giddens 1979, 1984). Thus, “it is agents who bring structure into being and it is structure which produces the possibility of agency” (Cassell, 1993, p. 12). Giddens (1984) refers to knowledgeability as “everything which actors know (believe) about the circumstances of their action and that of others, drawn upon in the production and reproduction of that action, including tacit as well as discursively available knowledge” (p. 375). In other words, human agents have the reflexive capacity to understand and explain what and why they do an action while they do it. Thus, an assumption of this study is that teachers are reflexive and knowledgeable agents with the capacity to understand and explain what and why they are adopting a place-responsive outdoor education approach in the school.

Edwards (2011) suggests that human action can either arise from deliberate and conscious decisions or spontaneously with little or no preparatory reasoning. This implies that there are different forms of knowledge that reside in humans. In place of the Freudian psychoanalytical distinction of ego, super ego and id, Giddens (1984) proposes three levels of consciousness (knowledge) to explain social practices (Figure 5):

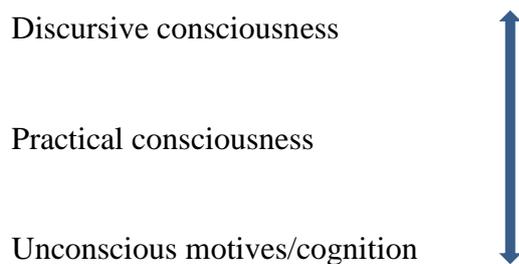


Figure 5. Levels of Consciousness (Giddens, 1984, p. 7)

He refers to consciousness as “recall, as a means of recapitulating past experiences in such a way as to focus them upon continuity of action” (Giddens, 1984, p. 49). In this model, a clear distinction between the levels of consciousness and the unconscious is made. Unconscious motive/cognition, also referred to as unconscious knowledge, is regarded as consisting primarily of human desires – the unconscious motivation to act (Loyal, 2003). Unconscious knowledge is also referred to as general dispositions of individuals such as values, worldviews, habits of speech, and gestures (Edwards, 2011; Stones, 2005). As described by Turner (1991), “the basic ‘force’ behind much action is an unconscious set of processes to gain a ‘sense of trust’ in interaction with others” (p. 519). Thus, an unconscious motive is considered as a critical component of the ability of the individual to maintain ontological security.

Discursive consciousness, also termed as conscious knowledge or propositional knowledge (Loyal, 2003; Polanyi, 1966, 2009) refers to where the actor reflects upon and monitors actions and gives a rational account of those actions. The actor is able to recall and express his/her behaviours and motivations. This can also include lying about his/her behaviour (Cassidy & Tinning, 2004). For example, a teacher who is asked why he has decided to adopt a place-responsive approach in outdoor education might provide a range of reasons such as wanting to learn more teaching approaches, and/or developing his innovative skills. These may sound plausible but may be false since his real intention was to merely follow what the rest of his department colleagues have decided to do.

Practical consciousness is the level where the actor knows what to do to produce and reproduce actions in a variety of contexts and to rationalise what is done

(Giddens, 1984). It is also referred to as non-conscious knowledge, tacit knowledge or social knowledge (Edwards, 2013, 2016). Polanyi (1966) was the first to conceptualise tacit knowledge as knowledge that cannot be articulated adequately by verbal means alone through his notion of “we know more than we can tell” (p. 4). According to Giddens (1984), practical consciousness comprises “all the things which actors know tacitly about how to ‘go on’ in the contexts of social life without being able to give them direct discursive expression” (p. xxiii). It is the form of knowledge that reflects shared social and cultural expectations of particular situations and roles (social norms) which in turn reflects the values and values priorities of the individuals or groups (Giddens, 1979). This will, in turn, lead to the establishment of useful day-to-day routines. Giddens (1984) posits routines or whatever is done habitually, as a basic element of daily or day-to-day social activity, for example, the teachers adopting the curriculum texts in their daily teaching, marking attendances, attending staff meeting, and so on. The repetitiveness of these day-to-day activities constitutes the recursive nature of social practices. By recursive nature, he refers to the structured properties of social practices that are constantly recreated out of the very resources which constitute them via the duality of structure. With this ‘routinization’ (Giddens, 1984) of day-to-day social activity, people are relieved of the need to consciously or deliberately assess every aspect of their daily actions, thus enabling them to act non-consciously in ways that comply with social norms. Thus, a sense of trust or ‘ontological security’ is sustained by people in daily activities through routines (Giddens, 1984).

For Giddens, “the notion of practical consciousness is fundamental to structuration theory” (1984, p. 6). It is the most significant component as it emphasises the continuous monitoring of social practices through reflexive self-monitoring that sustain continuity and flow of activity (Layder, 1994; Tucker, 1998). It is also fundamental to structuration theory and the knowledgeableability of the agent as it is the “cognitive and emotive anchor of the feelings of ontological security” (Giddens, 1991, p. 36). Ontological security can be regarded as “a ‘protective cocoon’ which stands guard over the self in its dealing with everyday reality” (Giddens, 1991, p. 3). It is referred to as the confidence or trust that a human agent has in “the natural and social worlds are as they appear to be, including the basic existential parameters of self and social identity” (Giddens, 1984, p. 375). It is the routinisation of social

practices which are established from early childhood onwards that the agent relies upon to gain confidence and trust. Turner (2003) explains the concept of ontological security as the need of an agent to sustain a sense of trust by being able to reduce anxiety in social situations. Hence, for people to be able to do their work well, it is argued that they require ontological security (Boucaut, 2001).

According to Giddens, the agent will operate within both practical and discursive consciousness with “no bar” since the only differences are “between what can be said and what is characteristically simply done” (Giddens, 1984, p. 7). However, the division between practical and discursive consciousness can be altered by aspects of the agent’s socialisation and learning experiences.

It has been suggested by Torff (1999) that many aspects of a teacher’s practice may be considered as intuitive and thus informed by practical consciousness or non-conscious knowledge. Gaining an understanding of the role of non-conscious knowledge is therefore a prerequisite for understanding teacher practices and the development of the educational rhetoric-reality gaps within the implementation of the place-responsive approaches in this study. Additionally, the teacher-collaborators in this study are fulfilling a multitude of roles in their daily social life such as a sports coach, counsellor, peer mentor, administrator, parent, and so on, in addition to being an outdoor educator. With these multitudes of roles assumed by the teachers, their practices will reflect not only their own unique life experiences but also the non-conscious knowledge of their cultural expectations of schools and education (Edwards, 2011). Likewise, the actions of both the teacher-collaborators and researcher during the data collection process in this study such as the interview sessions are predicated on their non-conscious views of the educational research processes. This may lead to the actions of the teacher-collaborators that are non-conscious and are structured based on assumed social norms or expectations rather than on conscious decisions.

Structure

The concept of ‘structure’ in structuration theory differs from that of the traditional approaches in sociology (Bryant & Jary, 1991; Layder, 1994). Most of the previous

use of 'structure' in sociology refers to it as "the descriptive analysis of the relations of interaction which 'compose' organisations or collectivities" (Bryant & Jary, 1991, p. 7). However, Giddens refers to structure as rules and resources that actors draw upon recursively in social practices. To Giddens, structure exists "only as memory traces, the organic basis of human knowledgeability, and as instantiated in action" (1984, p. 377). In other words, structure is dependent on activity. As pointed out by Craib (1992), structures "exist only in and through action, which produce, reproduces and changes them" (p. 112).

Rules and Resources

Rules in social life are what Giddens (1984) regards as "techniques or generalisable procedures applied in the enactment/reproduction of social practices" (p. 21). Rules are the very core of 'knowledgeability' which characterises a human agent expressed in practical consciousness (Giddens, 1984). They constitute a large proportion of our practical consciousness or non-conscious knowledge and serve as the foundation for our contextual behavioural routines in social interaction (Edwards, 2016). For Giddens, "rules and practices only exist in conjunction with each other" (1979, p. 65). It is through rules that individuals learn how to communicate and behave appropriately in different contexts (Turner, 2003). Turner (2003) suggests that there are two categories of social rules: regulative and constitutive. Regulative rules reflect a society's moral expectations of socially accepted and expected behaviours at different times and places according to the cultural character of the community. Constitutive rules allow the individuals to interpret events in order to create and derive meaning out of them. Constitutive rules are interpretative schemes of taken-for-granted understanding within different contexts (Edwards, 2011).

Additionally, structure refers not only to the implication of rules in the production (reproduction) of social systems but also the resources. For Giddens (1979), one cannot understand the notion of rules without resources. There are two types of resources: allocative resources, and authoritative resources (Giddens, 1984). Allocative resources are products of the material world. Thus, it refers to those physical resources that are used to control or direct patterns of social interaction.

Authoritative resources are the non-material resources. They relate to the capacity of the individuals to influence, direct or organise various aspects of social interaction. Allocative resources and authoritative resources are inter-related. For instance, a teacher in a school with greater allocative resources such as a Head of Department may enjoy greater authority in deciding the curriculum which may in turn lead to additional allocative resources given. Giddens posits that human agency is strongly influenced by access to both allocative and authoritative resources which combine to form the structural facilities used to control or dominate social interaction. This implies that power is derived from access to both these two categories of resources. For instance, the teachers' capacity to design and implement a place-responsive pedagogy in this study will depend much on their perception of and access to their power to do so.

Power

Giddens (1979, p. 88) regards power as the “transformative capacity” of the individual to achieve specific outcomes from their actions. Power is regarded as the capacity to make a difference. It can be tied to freedom and interdependence and does not necessarily involve exploitation or coercion (Tucker, 1998). According to Turner (2003), rules and resources together mediate social interaction by defining the social behaviours, shared meanings for communication, and appropriate sanctions for non-conformity. Relative power or domination of individuals is thus identified by the mediation of rules and resources with human social interaction. While it could be implied that human agency is intrinsically linked to power, Giddens (1984) argues that power structures are not absolute as even the least-resourced individuals have the ability to successfully influence those who seem dominant. Individuals are knowledgeable and have the ability to choose to use available resources in a way that can either resist or maintain a power structure. Hence, social structures, rules and resources are both enabling and constraining in social interaction. Giddens (1984) also coins the concept of ‘dialectic control’ to demonstrate the two-way relationship in power. The individual has the power to transform social practice but at the same time may be influenced by other individuals who are able to use available resources to gain some degree of control or domination over the conditions of production and reproduction of the social

practices. For Giddens (1991), the power that comes from the differences between people and social institutions determines how we fit in the social world.

Dimensions of the Duality of structure

Three dimensions of the duality of structure are established by Giddens as a means to analyse structure and social interaction (Figure 6). These three elements of signification (communication of meaning), domination (the exercise of power), and legitimation (evaluation and judgement of conduct) are involved in the process of structuration of systems of social interaction (Giddens, 1984).



Figure 6. Dimensions of the Duality of Structure (Giddens, 1984, p. 29)

Signification refers to how the individual acts upon rules of communication in a specific context. Domination refers to how knowledge, facilities and resources are used to produce the action. Legitimation refers to the societal rules that shape or judge the action. According to Cohen (1989) and Craib (1992), each of these elements co-exists, indicating the nature of duality of structure. These elements are tools that can be used by the individual when producing action.

Individuals also draw upon the modalities of structuration in the production and reproduction of systems of interaction. The three modalities which create the link between human action and structure are interpretative schemes, facilities, and norms. Interpretative schemes are “stock of knowledge applied reflexively in the

sustaining of communication” (Giddens, 1984, p. 29). They are shared stocks of knowledge that individuals draw upon to interpret behaviour and events, thus achieving meaningful interaction. Stocks of knowledge provide the base for the individuals to state the rationale for their actions and to share meaning (Dinah-Thompson, 2001). These stocks of knowledge enable communication but can also constrain it. Facilities or resources are the means through which the intentions and goals of the individual are achieved through the exercise of power (Orlikowski & Robey, 1991). Norms are the rules that govern appropriate or sanctioned behaviours. In producing and reproducing a set of codes of conduct by embracing a subjective point of view, individuals legitimate appropriate forms of behaviour through their continual use of the sanctions governing this behaviour and conduct. These sanctions and codes assist in the formation of institutional practices by reinforcing “order through traditions, rituals, and practices of socialisation” (Orlikowski & Robey, 1991). According to Orlikowski and Robey (1991), “these three modalities determine how the institutional properties of social systems mediate deliberate human action and how human action constitutes social structure” (p. 149). These modalities operate differently within each of the agential and structural domains consistent with the recursive characteristics of structuration thus achieving an interaction of subjective and objective elements.

For Giddens (1984), the three structures of social systems namely, the signification, domination, and legitimation are linked as shown in the double arrows in Figure 6. He posits that “structures of signification always have to be grasped in connection with domination and legitimation” (1984, p. 31). The relationship between these three structures of social systems emphasises the pervasive nature of power in social life.

Domination is seen by Giddens (1984, p. 3) as the “very condition of existence of the code of signification” as both inherent in social interaction as well as in the distribution of resources. Similarly, norms highlight the “structural asymmetries of domination” (Giddens, 1984, p. 30) and signification as they demonstrate commitment to the meanings they are supposed to generate (Dinah-Thompson, 2001). Thus, it is apparent that structures are inter-dependent and vary in contexts, time and space.

Criticisms of Structuration Theory

Whilst Giddens has been commended for his acknowledgement and critical appreciation of past social and sociology theories in his development of structuration theory (See Bryant & Jary, 1991; Clark, Modgil, & Modgil, 1990b; Cohen, 1989; Layder, 1994, 2005; Shilling, 1992; Stones, 2005), the theory has attracted a wide variety of criticisms as well. Many researchers (See Archer, 1995, 1996, 2010 [1982]; Bryant & Jary, 1991; Cohen, 1989; Craib, 1992; Layder, 1994, 2005; Stones, 2005; Tucker, 1998) have critiqued structuration theory as vague, incomplete, and lacking the elements of an authentic social theory. In agreement with this view, Turner (1991) points out that the theory is nothing more than a perspective of what should be, rather what is due to the lack of demonstrated normative components in it. Tucker (1998) lists the three major categories of criticisms of Giddens as “the vagueness of his theory, his inadequate historical approach, and his reliance on an ahistorical notion of subjectivity (p. 5). Additionally, Giddens’ vagueness in clarifying his concept of structure which he claimed to be different from its conventional definition and use is a subject of major criticisms. Urry (1982) and Layder (1994) claim that Giddens’ concept and definition of structure creates confusion and uncertainty due to its abstract nature. For instance, Layder (1994) took issue with Giddens’ definition of structure as rules and resources that exist only as memory traces and is constituted only in action. To Layder (1994), this definition of structure is problematic as it differs vastly from the pre-existing definition of structure as part of an institutionised context, and will, thus, lead to confusion. Urry (1982) questions this notion that structures do not exist in time and space but only in action by asking how social interactions can take place in the first instance.

Giddens’ apparent over-focus on agency at the expense of structure has also been criticised. Layder (1994) asserts that “structuration’s theory of the complexity of human activity is not matched by an equivalent appreciation of social structural depth” (p. 146). He claims that while Giddens has detailed a stratification model of

agency including knowledgeable, reflexive monitoring, motivation, rationality, unintended consequences and unacknowledged conditions of action, he has not offered a similar depth of social structures. It has also been claimed that structuration theory has an 'anaemic' idea of culture (Thrift, 1993, p. 115) as Giddens "does not examine people as meaning-seeking creatures whose lives are subtly shaped by their cultural beliefs" (Tucker, 1998, p. 8).

Change in Teachers' Knowledge, Beliefs and Practices

The notion of change in the knowledge, beliefs and practices of the teachers in outdoor education is central to answering the research questions in this study. A social change framework is required to aid the understanding of any change in their knowledge, beliefs and practices arising from their design and implementation of a place-responsive pedagogy in their outdoor education curriculum. Wheelers-Brooks (2009) suggests that structuration theory can provide an expanded understanding of human agency in which the individuals are knowledgeable and do have the power and ability to change social structures through their action. If a social institution such as a school has no existence apart from the human actions that constitute and re-constitute it, then the school, like a society, is not an oppressive entity that must be overcome, but a social construction that can be shaped through the actions of the agents such as teachers, students, administrators and stakeholders. In this research I will examine the agency of the teacher-participants and the structure that enable or constrain the design and implementation of a place-responsive pedagogy in their outdoor education programme.

Morrison (2005) claims that structuration theory as a theory of production and reproduction of practices can provide an account of change, inertia or stability of the individuals in social practices. In support of this, Edwards (2011) notes that some researchers have opted to adopt structuration theory for its potential to facilitate an understanding of change processes. However, the way in which structuration theory incorporates the notion of change has also been debated (Edwards, 2011). For instance, Giddens' emphasis on the importance of routine in directing human agency has raised concerns that structuration theory is essentially a model for the process of social reproduction but does not preclude social change.

As pointed out by J. Yates (1997), even in the presence of well-established routines, the individual maintains the conscious and unconscious, intentional and unintentional ability to act in ways that either sustain or modify routines. The presence of these well-established routines does not preclude social change. For a change in behavioural routines to occur, modifications of intention and/or motivation, as well as value priorities, attitudes and beliefs are required. Thus, for a change of practice to occur, the individuals will need to modify their previously established signification (communication of meaning), domination (exercise of power) and legitimation (evaluation and judgement of conduct) structures (Arts, 2000). Agreeing that routinisation in structuration theory is a powerful force for inertia rather than change, Morrison (2005) suggests that although individuals may act deliberately and intentionally, they may end up reproducing the existing social order and social fabric. In other words, there may not be any real change in their social practices.

As Giddens (1984) has alluded, individuals' beliefs in their ability to exert their power and to use available rules and resources to influence others will determine their practices. Bandura (1998) suggests that the belief of what is possible is a strong moderating factor of behaviour. For example, some teachers will adopt a place-responsive pedagogy only if they think that it will bring about the learning outcomes desired in the students. On the other hand, some teachers may choose to implement the place-responsive pedagogy despite not believing in the values of doing it. In such a scenario, any change in their practice will be short-lived. This has led to the notion that there are three levels of change occurring in a continuum (Sparkes, 1990). Figure 7 shows that modification of behaviours and attitudes can range from surface change, which Sparkes (1990) considers as relatively easy to achieve, to real change which is difficult to attain. In the context of teacher practices, surface change could be easily recognised when teachers adopt an instructional kit, guidelines, texts or 'new' pedagogy. However, any change in the content of teaching and learning alone may have little or no impact on the teacher's beliefs, values and teaching philosophy. A more enduring or real change which is very difficult to achieve will require the teachers to be challenged with their practices and ideologies and have them altered.

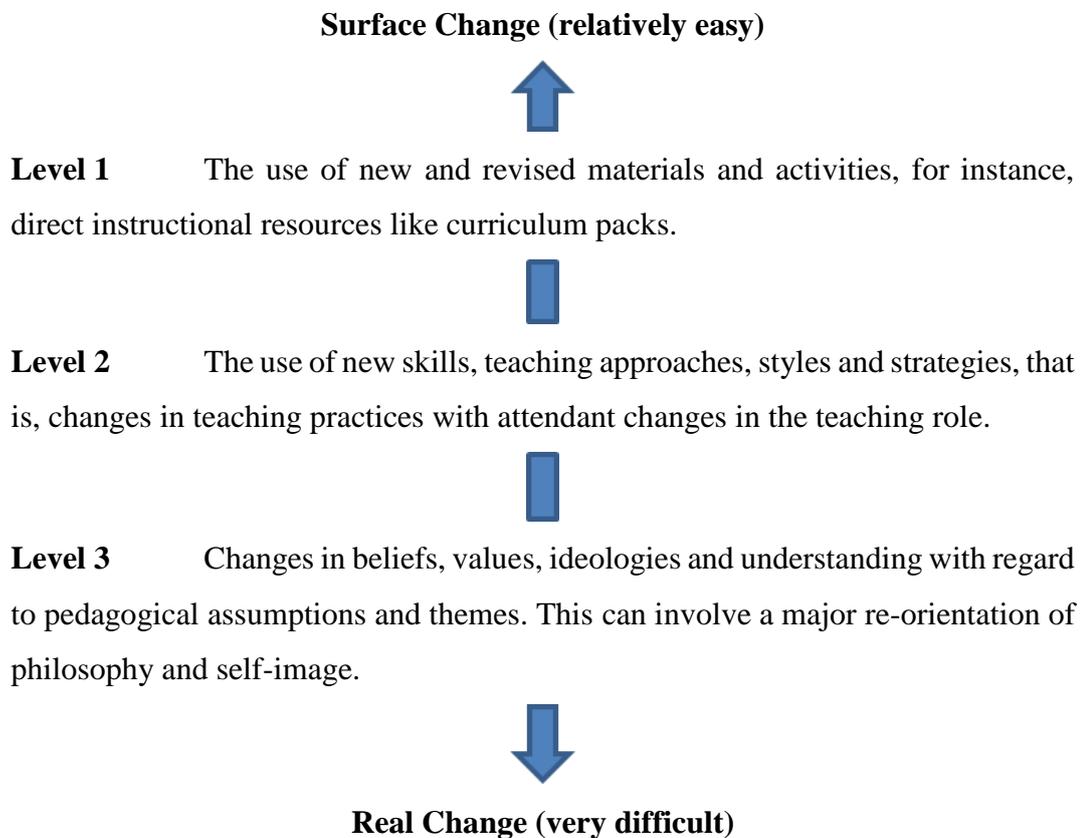


Figure 7. Levels of Change (Sparkes, 1990, p. 4)

As noted by Hargreaves (1994) and Fullan (1991), for curriculum change or modification to benefit students, not only will it need to include what will be taught in the classroom, it must also impact on the teachers' beliefs and practices as well. Dinah-Thompson (2001) suggests that the time and effort involved to effect real change by getting the teachers out of their comfort zones may be a challenge in attaining it. Sparkes (1990, p. 7) suggests that teachers will evaluate any proposal for pedagogical change on a 'practicality ethic' based on the three criteria of needs congruence, procedural clarity and personal costs and rewards. These three criteria have practical relevance in examining the processes involved in the design and implementation of the place-responsive pedagogy as well as the interpretation of field texts collected in this research study. These questions inform the criteria (Sparkes, 1990, p. 7):

- Needs congruence - Does the change potential a need for it? Will the students be interested? Will they learn?
- Procedural clarity - How clear is the change in terms of what the teacher will have to do?
- Personal costs and rewards - How will it influence the teacher personally in terms of time, energy, new skills, sense of excitement, feelings of competence, and interference with existing goal priorities?

Fullan (2007) views innovation or change as a process as shown in his model of change (Figure 8).

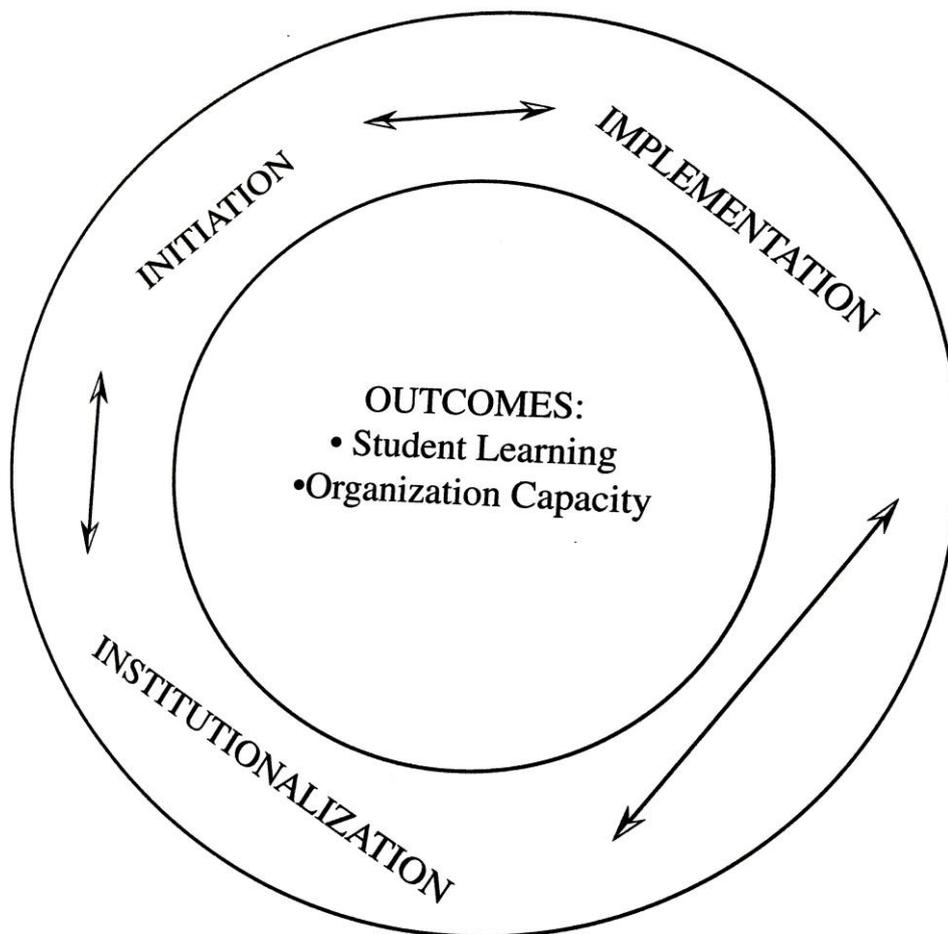


Figure 8. Fullan's Change Process (Fullan, 2007, p. 66)

The process of change is not linear but is iterative in nature as emphasised by Fullan (2007). This suggests that the process of change is a complex web of influential factors that can either proceed smoothly from stage to stage or revert back to its previous or initial stage. The notion of the initiation phase invites the question of “who develops or initiates the change?” (Dinah-Thompson, 2001, p. 44). Within the school setting, it is usually the result of a planned or mandated change or the influence of a single person or group. The many factors that influence the initial idea of change can either enable or disable support for the mobilisation of the idea. Fullan (2007) identifies eight factors that may hinder or support the change. They are: 1) the existence or quality of innovations, 2) access to information, 3) advocacy from central administrators, 4) teacher advocacy, 5) external change agents, 6) community pressure/support/opposition/apathy, 7) new policy and funds, and 8) problem-solving and bureaucratic orientations.

Phase Two of Fullan's change process is the implementation phase which is a dynamic process. Three scenarios are likely to occur in this phase according to P. Berman and McLaughlin (1976, p. 355). They are:

1. Non-implementation where persons involved do not continue to apply the innovation.
2. Co-optation: where innovation is adopted by authority figures and stakeholders are co-opted into applying the new ideas/methods.
3. Mutual adaptation: where innovation is being modified to suit daily practices of the stakeholders, and stakeholders alter beliefs, values and ideologies to meet the needs of the new organisational structure.

Real implementation consists of the transformation of existing practice to some new or revised practice which potentially may involve change in materials, teaching or

beliefs in order to achieve the desired student learning outcomes (Fullan & Park, 1981). This corresponds to Sparkes' (1990) idea of real change.

Phase three of Fullan's change process is the continuation/institutionalisation process. Institutionalisation is the transition of the innovation or change. The change can either lead to its embodiment in the regular operation or discontinuation. Whether the innovation or change is institutionised will depend much upon the influence of funding, administrators, institutional systems, community, teachers, and politics involved. In the case of this research study, any enduring transformation towards a more sustainable practice in outdoor education will require the positive influence of these factors. In summary, Fullan's change process model provides a useful guide to understand the various mechanisms that influence the initiation, implementation, institutionalisation and outcome of an innovation or change.

It is also important to recognise the presence of micropolitics that will occur in the site of any change or innovation process, as would be the case with the implementation of a place-responsive pedagogy in this study. Hargreaves (1994) argues that the micropolitical perspective of education administration has been given little attention. By micropolitical perspective, he refers to "the use of power to achieve preferred outcomes in educational settings" (Hargreaves, 1994, p. 190). Blase and Anderson (1995) believe that:

Micropolitics is about how people use power to influence and protect themselves. It is about conflict and how people compete with each other to get what they want. It is about cooperation and how people build support among themselves to achieve their ends. It is about what people in all social settings think about and has strong feelings about, but what is so often unspoken and not easily observed (p.12).

Thus, the key words to understand the micropolitical perspective of the change process are power, conflicts and cooperation (Dinan-Thompson, 2001). Conflicts can have both negative and positive outcomes. It can have detrimental effects if it negatively influences control or sabotages ideologies and roles. On the other hand,

it can be positive in revitalising dormant and inert systems. Cooperation is an important tenet for building collegiality and support for a change process. Any innovation or change process needs to acknowledge the micropolitical perspective by negotiating relationships and emphasising collaboration as central to the process to be successful (Dinan-Thompson, 2001).

Summary of Giddens' Structuration Theory and Applications

Clark, Modgil, and Modgil (1990a) summarised Giddens' theory of structuration into four interrelated propositions:

1. It is social practices which lie at the root of constitution of both individuals and society, not the individual action and experience of the individual agent nor the existence of requirements of totality of society (structural-functionism).
2. Social practices are created by knowledgeable human agents who have the capacity to self-reflect (reflexivity) in day-to-day social interactions and the power to make a difference. They have a practical consciousness of what they are doing and the ability to do it under certain circumstances.
3. Social practices are ordered and stable across space and time. They are routinized and recursive. In the production of social practices, human agents draw upon rules and resources (structural properties) which are themselves institutionalized elements of a society.
4. Structure is activity-dependent. It is both a medium and outcome of the process of structuration which is the production and reproduction of practices across time and space.

Additionally, Burrige et al. (2010) offer a framework (Figure 9) that is useful in summarising and applying the dynamics of structuration theory to investigate the design and implementation of place-responsive approaches in outdoor education in this study.

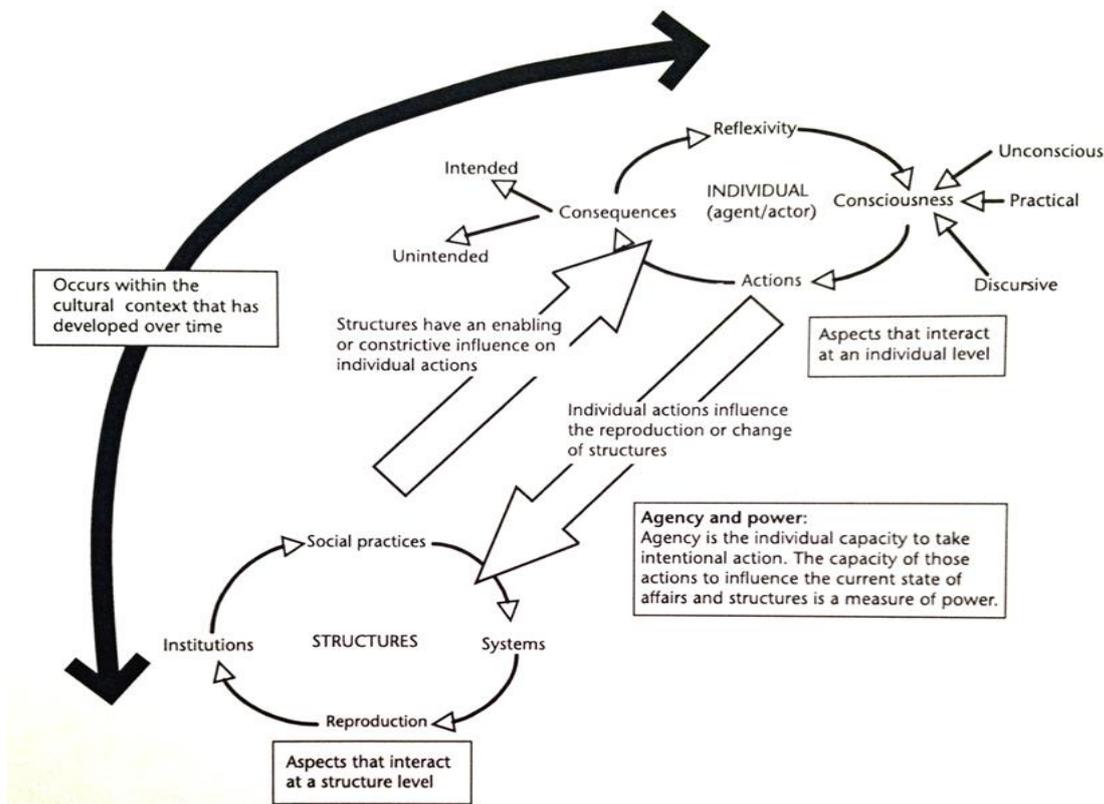


Figure 9. Dynamics & duality of structuration (Burridge et al., 2010, p. 26)

As depicted in Figure 9, the actions of the individuals create the social structures which in turn influence the actions and interactions of the individuals. The individual actors - in this case the teachers and researcher - are knowledgeable agents operating within the social structures that they have produced and reproduced. They are reflexive in their conduct. The individuals also have a level of capacity and control over their actions and are able to monitor and respond to the actions of others. This awareness or knowledge occurs at three levels: unconscious motive, practical consciousness and discursive consciousness. Moreover, the actions of the individuals have both intended and unintended consequences for all levels of consciousness.

The actions of individuals are continuous (not discrete) with many of their day-to-day functions routinised as influenced by the social systems which provide a level of predictability and sense of trust and security (ontological security). Institutions such as schools, for example, are formed by social systems which are maintained and reproduced over space and time. The institutions have rules, norms, regulations

and laws that are collectively termed as institutional orders created by and which in turn influence the individual actions (duality). The action of the individuals (agency) will have both intended and often unintended outcomes simultaneously produced. This framework (Figure 9) is adopted to help interpret the actions of the participants (both teacher-collaborators and researcher) in the study. It will also help in the understanding of the intended and unintended outcomes of their actions (non-actions) in designing and implementing the place-responsive pedagogy in outdoor education.

Implications of Structuration Theory for this Thesis

Giddens' (1984) structuration theory is used in this study for its many aspects related to structure (school culture, norms and resources; staff hierarchy) and agency (knowledge, attitudes, beliefs and practice of teachers, students and support staff) that can be incorporated into the process of data collection. The elements of structuration theory such as human agency in terms of knowledgeability and levels of consciousness, structure in terms of power, rules and resources, and time and space provide a useful framework to guide my interpretation and analysis of the data to answer the five research questions. Structuration theory as a theoretical interpretive framework helps to explain the outcomes of the research project. It serves as a lens that frames what is looked at and the subsequent questions that are asked during the process of data analysis and interpretation.

To frame the interpretation of the data collected for the research questions One to Three, I will use the concept of knowledgeability and level of consciousness comprising two components: discursive consciousness and practical consciousness. The difference between discursive consciousness and practical consciousness is: "... what can be said and what is characteristically simply done" (Giddens, 1984, p. 7). As posited by Fitzclarence (1988), the barrier between discursive consciousness and practical non-conscious is significant because "it is central to the ever present phenomenon of contradiction whereby there is slippage between intended and actualised outcomes of behaviour" (p. 136). Thus, I will be looking into the slippage that may occur between what the teachers believe they are doing

and what they actually do in their design and implementation of the place-responsive pedagogy.

In terms of the social structure, the dimensions of the duality of structure and the concepts of power and its associated rules and resources, will be applied to understand why (if any) the slippages occur. These concepts will also be applied to aid in the understanding of any change in their knowledge, beliefs and practices arising from their design and implementation of a place-responsive pedagogy in their outdoor education curriculum. The extent to which the elements of structuration theory can provide an expanded understanding of human agency in which the teachers are knowledgeable and do have the power and ability to change social structures through their action will be explored. The main aim is to employ structuration theory as a means to facilitate an understanding of change processes in both the schools and teachers in designing and implementing the research project.

Research Philosophy

In the preceding section, I detailed the theoretical interpretive framework used as a guide in data analysis and interpretation of my findings. I now move to outline my research philosophy that informs both the research questions and the methods of data collection and analysis in this chapter. I start with a brief description of qualitative educational research and my philosophical assumptions and beliefs. Next, I explain my selection of the multiple-case study approach as my main strategy of inquiry. I also briefly describe participatory action research as some elements of it were adopted during phase two of the study.

The purpose of employing a two-phase multiple case study is to address the following research questions:

Phase One

1. What are the prevailing knowledge, beliefs, and practices of the teachers of outdoor education in the two case study schools in Singapore?

Phase Two

2. What were the teachers' perspectives of designing and implementing a place-

responsive approach?

3. How did the implementation of place-responsive outdoor education pedagogy impacts on the teachers' knowledge, beliefs, and practices?
4. What are the enablers and barriers that affected their implementation of place-responsive outdoor education?
5. Does a place-responsive approach offer a viable and practical alternative to current modes of outdoor education delivery in Singapore?

Interpretive Perspectives in Education Research

My research project is a qualitative educational research study employing a case study approach. According to Denzin and Lincoln (2018), qualitative research is a field of inquiry that cuts across disciplines, fields and subject matter. It involves an interpretive, naturalistic approach to the world. This means the study of things in their natural settings and interpreting phenomenon in terms of the meanings people bring to them (Denzin & Lincoln, 2011). It seeks to discover and describe what the people do in their everyday lives and what their actions mean to them (Erickson, 2018). Pope (2006) suggests that qualitative research may be interpretive, positivist, or critical depending on the worldview of the researcher. My research project adopts an interpretivist position which employs a practical orientation and involves “getting out there” to investigate the beliefs, knowledge and practices of the selected teacher-participants in outdoor education (Pope, 2006, p. 23).

Interpretive Paradigms

Paradigms are usually embedded within the theoretical interpretative frameworks that the researchers use in their study (Creswell, 2012). Hence, the research process should flow from the researcher's worldviews, to the interpretative frameworks, and to the procedures involved in studying the research problems identified. The paradigms I have adopted, comprising the four categories of axiology, epistemology, ontology and methodology, are embedded in the theoretical

interpretive framework of Structuration Theory used for this study. Whilst these four paradigms are listed separately here, they are not mutually exclusive as they guide each other (Hunter, Emerald, & Martin, 2013).

Axiological Beliefs

All researchers bring their own values to a study but it is a practice of qualitative researchers to make their values known (Creswell, 2012). Axiology or ethics and values asks the question of “how will I be as a moral person in this world?” (Denzin & Lincoln, 2018, p. 97). As an outdoor educator, I support the rejection of what Freire (1972) has described as the ‘banking’ concept of education which treats the teacher as a depositor and the student as a depository of knowledge. I believe it is my role as an educator and researcher to enable my students or participants to develop their own conscientizacao (Freire, 1972). By this, I refer to the conviction of the ‘oppressed’ to fight for their own liberation rather than have it bestowed on them. I contend that this conscientizacao has to occur before we can alleviate the global issues of poverty, inequality, social injustice as well as injustice to the natural environment (non-human species). Examples of injustice to the natural environment are human inflicted causes such as over consumption of limited natural resources and global warming. Education for sustainability is an important role that outdoor education can play as posited by an increasing number of outdoor educators internationally (See for example: Hill, 2012, 2013; Nicol, 2003, 2014; Prince, 2017; Wattoo & Brown, 2011). This research project aims to explore some of these issues through the provision of an alternative place-responsive pedagogy to current practice of outdoor education. I am committed to the non-coercion, non-manipulation of the participants and their students for this study. My ethical beliefs also include honouring the values of mutual respect and confidentiality of information shared by the individuals.

In terms of power relations, I acknowledge the possibility that some of the teacher-collaborators may adopt a deferential and accommodating stance to me due to my position as a MOE officer. However, I am committed to diminishing this position in my interactions with the participants by emphasising my role as a researcher in this study and creating avenues for them to exert their co-ownership and control

over the research project. I believe that my effort to share power and control of the research project is in line with my ontological beliefs in effecting social transformation through construction of power through shared knowledges, values and beliefs.

Ontological, Epistemological and Methodological Beliefs

The ontological, epistemological and methodological positions I adopt in this study are grounded in interpretivism (constructivism). Interpretivism is the cognitive construction of knowledge from experience and interaction of the individual with others and the environment (Lincoln, Lynham, & Guba, 2018). Ontologically, interpretivists believe that there are multiple realities. Epistemologically, interpretivists view knowledge as actively constructed, grounded historically and culturally, and loaded with moral and political values (Pope, 2006). The knowledge of both the participants and the researcher is subject to continuous revision. It acknowledges that multiple ‘knowledges’ can co-exist and findings are read as significant when the accounts of the reality of the individuals converge. Rather than merely gathering facts and describing events narrated by the participants for my analysis, I am more interested in learning about their knowledge, beliefs, values and assumptions that underpinned their pedagogical approaches in outdoor education. Interpretivists acknowledge that the construction of knowledge is a social process and findings are created by both the co-participants as well as the researcher (Lincoln et al., 2018). My interpretivist epistemology informed the design methods that I used for both the data construction as well as the data analysis.

Simply put, methodology asks “how do we know the world or gain knowledge of it” (Denzin & Lincoln, 2013, p. 26). Our methodological beliefs are a reflection of the ontological and epistemological assumptions (Waring, 2017). My choice of methodological approach is guided by the interpretivist perspectives adopted. The interpretivist (constructivist) adopts a hermeneutic, dialectical methodology (Lincoln et al., 2018). This methodological approach uses an inductive method of emergent ideas obtained through consensus and employs methods such as interviewing, observing and analysis of existing texts (Angen, 2000; Creswell, 2013;

Lincoln et al., 2018). These are also aligned to the use of interpretive case study method as the form of narration of the findings in the study.

Strategy of Inquiry: Case Study

The study employs the case study as the main strategy of inquiry. As alluded by Pope (2006), one core constituent of interpretive paradigms is the case study approach. The case study inquiry approach was selected because it is ‘informative rich’ and ‘illuminative’ and “offers useful manifestations of the phenomenon of interest; sampling then, is aimed at insight about the phenomenon, not empirical generalisation from a sample to a population” (Patton, 2002, p. 40). Ashley (2017) suggests that the purpose of case study research is to explore a phenomenon about which little is known, or to describe something in detail. Thomas (2015) also posits that the case study approach is especially good for developing an understanding of the details of what is happening. He likens it to creating a three dimensional picture by looking at the subject from many and varied angles. There are significant variations in the definition of a case study and how it is understood (Schwandt & Gates, 2018). The following definition by Simon (2009) best fits the description of my research project:

An in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, programme or system in real-life context. It is research-based, inclusive of different methods, and is evidence-based. The primary purpose is to generate in-depth understanding of a... programme, policy, institution or system to generate knowledge and/or inform policy development, professional practice and civil or community action (p. 21).

The case study approach has also been defined as a method (Gomm, Hammersley, & Foster, 2002). However, some researchers have argued that it is not. Gerring and McDermott (2007), Seawright and Gerring (2008), VanWynsberghe and Khan (2007), for example, contend that this approach is not a method as case study researchers cannot actually collect data prescriptively using case study. Instead various research methods may be employed in a case study. The case study

approach has also been described as a research design. In contrast, VanWynsberghe and Khan (2007) argue that it cannot be considered as a research design as the case study approach does not offer a prescriptive guide for how to proceed with the process of collecting, analysing and interpreting data.

As a strategy of inquiry (Creswell, 2018; Denzin & Lincoln, 2005), case study allows the researcher to focus on the 'case' which is a 'functioning specific' and a 'bounded system' (Stake, 2006). In short, a case study is an approach where the researcher has clearly identifiable cases with boundaries and seeks to gain and provide an in-depth understanding of the cases (Creswell, 2007). This enables the researcher to retain a holistic and real world perspective such as in studying small group behaviour, organisation and management processes, community change, and school performance (Yin, 2014). The case study approach is an empirical inquiry that examines a phenomenon within its real-life context especially when the "boundaries between phenomenon and context are not clearly evident" (Yin, 2009, p. 13). It is a detailed inquiry to get an improved understanding of a usually complex phenomenon such as a real-life event, a specific setting, a single subject or group (Stake, 2005; Yin, 2009).

The strengths and advantages of the case study approach is the provision of an in-depth, detailed, comprehensive examination of a particular person, group, community, institution, project, programme or policy, and the potential to make naturalistic generalisations (Chenail, 2010; Stake, 2005; Tracy, 2010; VanWynsberghe & Khan, 2007). Conversely, its potential weaknesses and disadvantages include "the unique and idiosyncratic nature of the information gathered, which potentially limits the generalisability of the findings, and may also lead to a number of misunderstandings about the worth of the case study approach" (Hodge & Sharp, 2017, p. 65). Nonetheless, Tracy (2010) posits that instead of relying on formal generalisations, case study can offer naturalistic generalisations or transferability. She regards naturalistic generalisations or transferability as "processes that are performed by the readers of the research" (Tracy, 2010, p. 845). For Tracy (2010), transferability is achieved when the readers perceive some overlaps with their own situations and intuitively transfer the findings to their own contextual actions.

Stake (2005) creates a differentiation of three types of case studies. The first type, the intrinsic case study, is used primarily because of an intrinsic interest by the researcher in a particular case. The “purpose is not to come to understand some abstract construct or generic phenomenon, such as literacy or teenage drug use or what a school principal does” but to tease out the stories of those “living the case” (Stake, 2005, p. 445). The second type of case study is the instrumental case study where a particular case is studied for the purpose of providing an insight into an issue or form a new generation. The ‘case’ in instrumental case study is of secondary interest to aid in understanding of something else (Stake, 2005). The third type, multiple or collective case study is one in which two or more cases are studied jointly to investigate a phenomenon, population or general condition. The multiple-case study can also be considered as an instrumental study extended to two or more cases (Stake, 2005, p. 446). Multiple case study is a ‘target collection’ or ‘quintain’ defined as “an object or phenomenon or condition to be studied – a target, but not a bull’s eye” (Stake, 2006, p. 6). It starts with a ‘quintain’ or collective target. According to Stake (2006), to understand the collective target better, we study the individual cases in a multiple case study, but it is the collective target that we seek to understand. The aim is to examine the similarities and differences about the cases in order to understand the collective target better. The collective target in this study is to find out the answers to the six research questions posed.

The multiple-case study approach is adopted in this study to help with the in-depth examination across two schools, the administration and operation of the outdoor education programmes in terms of the policy, resource, enablers and barriers that shape the knowledge, beliefs and practices of the teachers. At the same time, the purpose of employing multiple-case study is to go beyond the case or otherwise known as primarily for instrumental reasons (Stake, 2006), to study the MOE (central) policy, funding, resources, partnerships with the schools that have created the enablers and/or barriers in the design and implementation of a place-responsive outdoor education programme.

The two selected schools are at different stages of their implementation of an integrated approach to outdoor education. This allows me to examine their

administrative structure, policy, and resources in their school outdoor education programme. Specifically, I will look at the enablers and/or barriers in the adoption of a place-responsive pedagogy in the schools. The objective is to enable me at the end of the project, to produce a conceptual design framework on place-responsive pedagogy in outdoor education programmes that could be used in other schools. This conceptual design framework takes into consideration the varying stages of the outdoor education programme journey of different schools.

Participatory Action Research

While the multiple-case study is adopted as the main strategy of inquiry, I have also planned to employ some elements of the participatory action research approach with the two schools. This is the collaborative part of the research project with the purpose of helping both the teacher-collaborators and the researcher to develop our practice of place-responsive pedagogy. The adoption of the participatory action research approach will help to address research question two to four. The key features of participatory action research involve a spiral of self-reflective cycles; is participatory, practical and collaborative, critical, reflexive; and aims to transform both theory and practice (Kemmis & McTaggart, 2005). According to Kemmis and McTaggart (2005, p. 563), participatory action research is generally regarded as a sequence of steps in a spiral of self-reflective cycles involving:

- Planning a change
- Acting and observing the process and consequences of the change
- Reflecting on these processes and consequences
- Replanning
- Acting and observing again
- Reflecting again and so on....

As posited by Kemmis and McTaggart (2005), the process of this spiral of self-contained cycles of planning, acting and observing, and reflecting may not be as neat as it appears to be in reality due to the overlapping of the stages and possibility of initial plans becoming obsolete quickly as a result of learning from experience. This turned out to be true in this research project as initial plans became unworkable

due to certain constraints faced by the participants, largely attributed to the busy school calendar.

It was envisaged during the start of the research project that when conceptualised in collaborative terms, participatory action research will provide the opportunity for people to gather together to create forums as co-participants in their struggle to change the practices through which they interact in a shared social world (Kemmis & McTaggart, 2005). The term 'teacher-collaborators' was adopted specifically to denote the collaborative intent of the research project to enable both the teachers and researcher to co-create the place-responsive programme. The design and implementation of the place-responsive approach was completed largely by the team of teacher-collaborators with the researcher serving mainly as a facilitator and resource person. Participatory action research was adopted to enable the teacher-collaborators to review their existing outdoor education practices; learn, plan, and implement a place-responsive approach and review the pedagogical change as a collaborative effort amongst the team. This is done with the use of the 'plan, act and review' cycle to guide the whole process. It is envisaged that the participatory action research with the ownership given to the team of teacher-collaborators with regards to planning, design, implementation and review of the outdoor education curriculum will be more effective in effecting a shift in their practice towards a place-responsive pedagogy. While the fulfilment of the full process of the participatory action research design was not completed, the value of empowerment of the participants to evaluate and transform their practice for the benefits of their students was adhered to.

Chapter Five: Research Setting, Designs and Methods

Introduction

In this chapter, I describe the research setting, designs and methods employed in the research project. I detail the research setting which employ a case study of two secondary schools in Singapore with an integrated outdoor education programme within their curriculum. In addition, I outline the sampling strategy in the selection of the schools and the teacher-collaborators for this research project. The designs and methods used are conceptualised in two phases. The first phase is an exploratory qualitative inquiry to determine the prevailing knowledge, beliefs, and practices of the teacher-collaborators in the two case study schools. This is done using semi-structured interviews and focus group discussions methods. This is followed by a description of the subsequent professional development workshop on place-responsive pedagogy in outdoor education that was organised in collaboration with the teacher-collaborators. The professional development phase helped the team, including myself, in building upon our knowledge, beliefs, and practices of a place-responsive pedagogy. This is an on-going process throughout the research project.

The second phase comprises the design and implementation of the place-responsive pedagogy in the outdoor education programmes for the two schools utilising the multiple-case study as the strategies of inquiry. The data collection methods include: interviews, focus group discussions, participant observations, and review of the school documents. Finally, I outline the data analysis techniques employed, reflect on my reflexivity as well as highlight the limitations of the study.

Research Setting

As observed by Ho (2013), there are varying forms of implementation of outdoor education among schools in Singapore. In addition, there are many forms of outdoor learning that are carried out in a typical school year. I have an interest in studying the viability of introducing place-responsive approaches as an alternative to the prevailing pedagogy used in outdoor education in the secondary schools. Given the

varying forms of implementation of outdoor education in the schools, I decided to employ a case study of two schools which have an integrated outdoor education programme within their curriculum. Hence, the research setting for this study is two schools within the centralised education system in Singapore. They are Base Secondary School¹ (BSS) and Crest Secondary School² (CSS). Both schools were selected as they provide outdoor education as part of the school curriculum. As part of the confidentiality agreement to protect their identity, pseudonyms are used for the two schools.

Permission to carry out the study was sought from the MOE Data Administration Unit and the principals of the two schools to inform them of the purpose and procedures of this study. This permission was sought in the form of a written confirmation by the MOE Data Administration Unit. A meeting with the two principals was arranged and their approval to carry out the study was granted. Subsequently, the potential teacher-collaborators were invited to join the project. After explaining the project to potential participants through an information letter (see appendix A) and a meeting, I requested and obtained their participation through a written informed consent (see appendix B). The participants were informed during the meeting of their right to decline to participate. They could access and correct personal information, withdraw any information they have provided, and withdraw from the study at any time up until the analysis started. They were also informed of the process for withdrawing data they provided, the duration and security of the data storage, and the form in which the findings will be published and/or reported. Permission was also obtained from the teacher-collaborators for all the interviews and field observation sessions of their practice to be audio-recorded by the researcher. As part of the process of member checking, all transcripts of the individual interviews were sent to each teacher-collaborator to provide the opportunity for them to review and amend the transcribed text.

Detailed descriptions of the two case study schools are provided below to explain the context, particularity and complexity of each case study site. Stake (1995, p. 8)

¹ Pseudonym

² Pseudonym

refers to ‘particularity’ as “not primarily as to how different it is from others but what it is, what it does”. This implied getting to know a particular case well. The culture and ethos of the two schools, together with the outdoor education programmes that they offered, are detailed here to provide the contextual background which is an important aspect of case studies (Creswell, 2007; Stake, 2006; Yin, 2014).

Case Study One: Base Secondary School (BSS)

Base Secondary School (BSS) is a co-ed public secondary school found in the typical ‘suburb’ area (satellite town) in Singapore with an enrolment of 1204 pupils in 2013. It was established in 1999 as is regarded as a ‘neighbourhood’ school meaning that it is located in the midst of a public housing estate in Singapore and will typically enrol students staying in or near the neighbourhood. The majority of the student population (1,200) had relatively lower aggregate Primary School Leaving Examination (PSLE) scores compared to their peers in top schools in Singapore. The school’s mission is to prepare their student to better meet the challenges of the future by building their emotional, ethical, intellectual, physical and social capacity through organisational commitment, competence and compassion.

In line with the call by the MOE for all schools to establish their own niche areas, coupled with incentives such as annual additional funding for achievement in the defined area, BSS has established a reputation for its uniformed groups. The uniformed groups in the school comprise: National Cadets Corp (Air), National Police Cadet Corp, Red Cross, Scouts, and Girl Guides. In 2013, BSS received its 10th consecutive sustained achievement award for excellence in this area from the MOE. Subsequently, it was recognised by the MOE as a Centre of Excellence for its uniformed groups.

The school has an outdoor challenge ropes course and climbing wall that were built and certified according to the international standard set by the Association of Challenge Courses Technology, USA (ACCT) and European Standards (EN) respectively. It prided itself on these adventure facilities and learning opportunities

offered to its students as well as students from schools in the same cluster. These adventure facilities were also used as a selling point for the school to recruit new students.

Outdoor Education in BSS

BSS has an established outdoor education programme that has been put in place since 2005. Outdoor education is carried out through both the core curricular subject disciplines and co-curricular programmes through either a module in the subject syllabus or in the form of field trips or project work outside the classroom. Under the curriculum, outdoor learning is planned and implemented by academic subject departments including science, humanities, and physical education.

For physical education, a ten-week outdoor education module is included within the physical education curriculum for all the secondary three students in BSS. This outdoor education module comprises of high challenge ropes activities, rock wall-climbing and orienteering lessons using the outdoor facilities available in the school. It was started in 2005, well before the recent initiative by the MOE to include it as a mandatory module in the physical education syllabus for all students from 2014 onwards. In addition, annual cohort adventure-based residential camps between two to four days are also organised for the secondary one to secondary three students as part of the curriculum offering. These camps are usually outsourced to a service provider due to the large cohort size of nearly 280 students.

Under the co-curricular aspect, outdoor education is offered in the form of field trips, learning journeys, camps and outdoor adventure activities both locally and overseas for student groups such as the student councillors, class and sports leaders, outdoor activities club, and uniformed groups such as the scouts and girl guides.

The Teacher-Collaborators in BSS

At this juncture, it is useful to introduce the teacher-collaborators involved in the research project. The teacher-collaborators selected were a group of educators who had agreed to collaboratively design and implement a place-responsive outdoor

education programme with the researcher. BSS has an initial team of six teacher-collaborators in Phase One of the project: Hwei, Peng, Keng, Ray, Wai, and Yan. The initial team comprised of three PE teachers, two science teachers and a geography teacher with two males and four females. This team was subsequently expanded to nine teacher-collaborators during phase two of the study. The team was led by Hwei, who is also in charge of the group of outdoor education specialists appointed by the school. The role of the team in-charge was to facilitate the efforts of the team in the design and implementation of the outdoor education programme in their school. For this research project, the team of teacher-collaborators worked with the researcher to design and implement a place-responsive pedagogy in the three-day outdoor education camp conducted locally for their secondary three students.

A brief contextual profile of each teacher-collaborator is provided below. Pseudonyms have been used to protect the identity of these teacher-collaborators where they have been quoted directly in this thesis.

Hwei is the subject head for PE in the school. She is an experienced teacher who has taught in BSS for nine and a half years prior to the interview. She is the overall teacher-in-charge of the outdoor education curriculum and also heads the student leadership committee in the school. She teaches physical education and outdoor adventure education.

Peng is the subject head for physics and is the teacher-in-charge of the outdoor activities club for the students. She has taught in the school, her first posting, for nine years. She is also the chair for the green committee in the school. The green committee comprised of a cross-disciplinary team of teachers overseeing the environmental education programme in the school. Peng teaches science and helps the PE department in conducting the cohort level outdoor adventure education camps.

Keng is an experienced teacher who has been teaching for eight years. She has been in BSS, her second school for five years. She teaches science at the lower secondary level. She conducts some of her science lessons using the outdoors and helps the

PE department with the secondary three adventure education camp as a form teacher in one class.

Ray has four and a half years of teaching experience. He is a new teacher in the school having joined five months prior to the first interview. He teaches geography and is a member of the green committee in the school. Prior to joining the school, Ray was an outreach officer with National Parks, Singapore for three and a half years.

Wai is a beginning teacher who joined the BSS, his first teaching school, six months prior to the first interview. He teaches English, PE and outdoor adventure education. He is also the teacher-in-charge of the Diamond Programme, a hands-on experiential learning programme for the secondary three normal (technical) students.

Yan is an experienced teacher who has been in the school for seven years prior to the first interview. She teaches mathematics, PE and outdoor adventure education. She is also a member of the student leadership committee that organises adventure education camp for student leaders.

Three additional teacher-collaborators were added in Phase Two of the research project following the professional development workshop. Their brief profiles are detailed below.

Bao is an experienced teacher with 11 years of teaching in secondary schools. He joined BSS, his second school, in 2012 and teaches PE and outdoor adventure education. He was appointed as the Camp Commandant overseeing the planning and implementation of the place-responsive secondary three student camp for 2013.

Fay is allied educator for PE who has been in BSS for five years. An allied educator is not a qualified teacher. His role is to assist the PE teachers in the teaching of PE and outdoor education. He also helps out with the co-curricular activities organised by the PE department for students.

Vaugh has been teaching for thirteen years. He joined BSS in 2010 and teaches PE and outdoor adventure education. He is a key member of the student leadership development committee and oversees the Student Council, a group of student leaders who lead the student body in BSS.

Case Study Two: Crest Secondary School (CSS)

Crest Secondary School (CSS) is an all-girl aided and missionary secondary school with an enrolment of close to 1200 students in 2013. It is situated next to an old public housing estate in Singapore. The school's mission is to create a community where all will work together to promote truth, justice, freedom and love with special reference to the needs of the disadvantaged. The school upholds the values of commitment, conscience, compassion and courage. It has established a niche in hockey having been a dominant force in this school sport scene since the 1960s.

The school administration has expressed a keen interest to explore the implementation of an integrated outdoor education programme in 2011. This is shown in the new designation assigned to the head of PE to include outdoor education. As a key appointment holder, the head of PE and outdoor education is in charge of planning and overseeing the integrated outdoor education programme for the school.

Outdoor Education in CSS

For CSS, a unique outdoor education offering is in the Education For Life (EFL) curriculum started in 1992. This flagship EFL programme is offered to the entire cohort of students across all levels. The EFL combines both the curriculum and co-curriculum through the integration of the various subject disciplines with outdoor and experiential learning. The EFL initiative aims to take learning beyond the classroom to ensure that the students are 21st Century ready. Three 21st Century skills, namely: problem solving, research skills, and communication and expression of ideas were identified together with the development of social-emotional competencies of the students for this school-wide initiative. Emphasis was also placed on cross-disciplinary learning across subjects with integration into both the

curriculum and co-curriculum. For example, the EFL curriculum for the secondary two cohort comprised of a semester of group project work with lessons held weekly. The project work integrated the content of various curricular subjects. A practical component of the project work is enacted as part of the four-day adventure-based camp held overseas in Johor, Malaysia. Similarly, the EFL programme for the secondary three students included getting them to research and plan a community involvement project overseas. It integrates service learning with outdoor experiential learning utilising some adventure-based activities.

Since 2009, an internationalising component was introduced in both the secondary two EFL overseas adventure-based camp and secondary three EFL overseas community involvement project. These two overseas trips aim to provide more opportunities for students to develop their global awareness and cross cultural skills which come under one of the domains of the MOE 21st Century skills (see Figure 1 in Chapter One).

In CSS, kayaking and swimming are offered as part of the outdoor education modules in the PE curriculum. The skills acquired in these two modules by the secondary one students are applied during the overseas adventure camp the following year.

The Teacher-Collaborators in CSS

CSS has an initial team of five teacher-collaborators in Phase One of the project: Choo, Dan, Huat, Maran, and Yun. The initial team comprised of three PE teachers, and two science teachers with three males and two females. The team were led by Choo, head for PE and outdoor education, who is also in charge of the EFL programme for the cohort of secondary two students. Similarly to Hwei in BSS, the role of Choo, as the team in-charge, was to facilitate the efforts of the team in the design and implementation of the outdoor education programme in CSS.

For this research project, the teacher-collaborators collaborate with the researcher to design and implement a place-responsive pedagogy in the EFL programme for

the secondary two student cohort comprising the group project work segment and a four-day outdoor education camp conducted overseas

A brief contextual profile of each teacher-collaborator is provided below. Similarly, pseudonyms have been used to protect the identity of the CSS teacher-collaborators where they have been directly quoted in this thesis.

Choo is the head of department for PE and outdoor education in CSS and teaches physical education and outdoor education. She is the overall coordinator for the outdoor education and the EFL programmes for all the levels, from secondary one to five in the school. The EFL programme with outdoor experiential learning components incorporated comprised the following:

- Secondary One EFL: Local-based project using outdoor experiential learning to create “Sandshoes” and a National Education trail
- Secondary Two EFL: Four-day overseas adventure-based camp plus project work
- Secondary Three EFL: Five-day overseas community involvement project.

Dan is a PE and biology teacher in the school and teaches PE, biology and outdoor education. He is in charge of organising the four-day overseas adventure camp in Malaysia for the cohort of 200 secondary two students as part of the EFL programme. He is also in charge of planning the orienteering segment of the outdoor education module within the PE syllabus in the school. Dan also assisted his colleagues in the PE department with all the camps organised for the other student levels.

Maran is a PE and mathematics teacher in the school. He is the teacher-in-charge of hockey and is a member of the student leadership committee. Maran is also the teacher-in-charge of organising the overseas community involvement project as part of the EFL programme for the entire secondary three student cohort. Maran withdrew from the research study in phase two as he was not actively involved in the design and implementation of the place-responsive outdoor education project.

Huat is the head of department for science. He oversees the design and implementation of the integration of various subjects in the project work segment of the secondary two EFL programme. He teaches science and supported the PE department during the secondary two EFL overseas adventure camp.

Yun is a science teacher in the school. She is the teacher-in-charge of the National Police Cadets Corp, a student group that regularly engages in a variety of outdoor activities. She conducts some of her lessons using the outdoors and helped out in the secondary three adventure education camp.

CSS has an initial team of five teacher-collaborators with one (Maran) eventually withdrawing from the study in phase two due to his non-involvement in the design and implementation of the place-responsive programme.

Sampling Strategy

The sampling strategy used in this study was purposive sampling. As Silverman (2010) suggests, purposive sampling “allows us to choose a case because it illustrates some feature or process in which we are interested” (p. 141). In a similar vein, Creswell (2014) posits that the idea behind qualitative research is to purposefully select participants and sites that will help best understand the problem and address the research questions.

Both schools were selected based on their interest in the study topic and their desire to implement an integrated outdoor education programme beyond the residential adventure camp that all schools are encouraged to organise. The Heads of both school teams also expressed their interest in employing alternative pedagogical approaches to deliver outdoor education programmes. Both schools were also selected as they are considered atypical cases in that they have chosen to adopt outdoor education as a curriculum within the school rather than merely as co-curriculum as is the case with most Singapore secondary schools. This is in alignment with the view of Stake (2005) that it is better sometimes to learn a lot from an atypical case than a little from a typical case.

The teacher-collaborators were chosen by the team in charge of both schools after a discussion with the researcher on the nature of the study and the need for the participants to be involved in the adoption of the place-responsive pedagogy as a crucial part of the study.

Designs and Methods

The research project is conceptualised in two phases. The first phase of the research study was an exploratory qualitative inquiry to determine the prevailing knowledge, beliefs and practices of the teachers in the two case study schools in place-responsible outdoor education pedagogy. Both the interviews and focus group discussions selected for this study are informed by the research questions as well as my philosophical, ethical, epistemological and ontological positions of critical pedagogy, constructivism and critical theory. The individual interviews and focus group interviews method are not neutral (Fontana & Frey, 2005) and allow me as the interviewer to become a partner in the study with the aim of using the results to enhance the knowledge, understanding and practice of outdoor education.

Preliminary data gathered following the initial individual interviews and focus group discussions was used to design the professional development workshop on place-responsive pedagogy. Subsequently, after the professional development workshop, the participants collaborated with the researcher to design and implement the outdoor education programme in phase two of the project.

The data construction methods for the first phase of the project consist of an initial individual semi-structured interview followed by a focus group discussion with each group of outdoor educators in the two case study schools. The intent is to examine the beliefs and perceptions of their practice of outdoor education and place-responsive pedagogy so as to help me to gather the data to co-design the appropriate level of professional development suitable for the teacher-collaborators. An initial individual interview was conducted with all the teacher-collaborators to study their knowledge, beliefs and practices of place-responsive outdoor education. The interview questions included their background and experiences in teaching, views of outdoor education, and enablers and barriers to their practice of it (see

Appendix C for interview questions). This was followed by the focus group discussion. All the focus group and individual interview sessions were audio-recorded with the consent of the teacher-collaborators to allow some time for the researcher to observe and record the other non-oral communication methods such as the use of signs and body language. The recording of the focus groups and interviews sessions were transcribed in verbatim and all interviewees were invited to review the transcribed text thereafter to provide the opportunity for them to verify the data.

Professional Development

One of the assumptions I held during the exploratory inquiry phase of the study is that the teacher-collaborators will have little or no background knowledge and practice of a place-responsive pedagogy in outdoor education. Hence, a professional development session aimed at introducing or revisiting (in the case of those with some pre-existing knowledge and understanding of place-responsive pedagogy) was conceptualised at the beginning of the study (see appendix D for PD programmes). The methodological approach for this professional development session adopts the constructivism and critical theory perspectives in designing and implementing its process. Preliminary data gathered through the individual interviews and focus group discussion for both teams affirmed the assumption that little is known about a place-responsive pedagogy among the teacher-collaborators.

Permission was sought and granted from Mike Brown, one of the authors of the text, *Pedagogy of Place: Outdoor Education for a Changing World* (Wattchow & Brown, 2011), to use three chapters of the book as a basis for the group discussions to construct a collective knowledge and understanding of the concepts and issues identified in outdoor education and place responsive pedagogy in the book. The professional development session largely adopted the format of a period of silent individual reading of the articles circulated followed by group discussions and summary of the key learning points. Opportunities were also given to the teacher-collaborators to voice their frank opinions of the issues raised. This format was used based on my constructivist epistemological and critical theory ontological positions.

All the teachers-collaborators who have participated in the professional development workshop in both case studies schools shared that it was beneficial to them. They revealed that both the theoretical and practical sessions have helped in enhancing their knowledge and practice of a place-responsive pedagogy in outdoor education. The workshop enhanced their confidence and perception of the viability of adopting a place-responsive pedagogy. Specifically, they found the four signposts proposed by Wattachow and Brown (2011) together with the place-based questions by Wendell Berry (1987) to be a valuable guide for their intended design and implementation of a place-responsive outdoor education programme in their schools.

The plan for the professional development of all the participants, including myself, was to keep it as an on-going feature during the entire process of the study. This was to enable us to constantly reflect and evaluate on our competencies (knowledge, skills and attitudes) as place-responsive educators. In discussion with the teacher-collaborators, we thought this was a necessary move to keep up the momentum and motivation of the team members during the project. After the implementation of the programme, circulation and sharing of relevant articles from education and outdoor education journals and books that were related to the research topic and the review sessions were done as part of this professional development. Both school teams also took the initiative to present their project in a conference/seminar organised by the MOE as part of their aims to consolidate and share their learnings with colleagues from other schools. The sharing by BSS at the Physical Education and Sports Conference 2013 organised by MOE further boosts the confidence and motivation of the team members. Although it was not part of the original idea to share a place-responsive pedagogy with other non-participating department staff of CSS, the idea to co-design and conduct one for them arose from a discussion by the team members on ways to get buy-in from other staff. The team members felt that getting the buy-in from the other staff was critical for the sustainability of the project. Thus, an initial sharing session was carried out for a group of eight staff from the various departments. Subsequently, positive feedback received resulted in another sharing session conducted for the entire school management team of key personnel.

Data Collection Design and Methods in Phase Two

Following the professional development of the teacher-collaborators in place-responsive pedagogy in outdoor education, the members collaborated with the researcher to design and implement the outdoor education programme in phase two of the project. In addition to the use of focus group and individual interviews, the second phase of the project includes participant observation to collect data on the teacher-collaborators in action in the field. The field observations were conducted during the sessions held by the teacher-collaborators to discuss their plans prior the residential place-responsive camp they were conducting. I also observed the teacher-collaborators in BSS during their three-day camp. Details of the camp is described in Chapter Seven.

Semi-Structured Interviews

The semi-structured interview is employed in this study as it can “allow people to answer more on their own terms than the structured interview permit” (May, 1993, p. 93). Gilham (2000) also posits that the “semi-structured interview is the most important form of interviewing in a case study” because if it is done well it can be the “richest single source of data” (p. 65). In this study, semi-structured individual interviews of 30 to 60 minutes in duration were conducted to enable the teacher-collaborators to provide their personal narratives of their beliefs, experience, insights and learning of place-based pedagogies before, during and after its implementation in the outdoor education programme in their schools.

Focus Group Discussions

The focus group research method has expanded from being primarily practiced as group interviewing with predetermined question-answer structures to a dialogic process within which the power relations between the researcher and participants are diminished (Kamberelis & Dimitriadis, 2013). Fontana and Frey (1994) posit that focus group discussions in formal or informal settings “is an option that deserves consideration because it can provide another level of data gathering or a perspective on the research problem not available with individuals interview” (p.

364). Gibbs (2017) also maintains that “focus groups are highly suited to many kinds of educational research” and when undertaken well can “produce quality in-depth interactional data of a kind not possible through other methods” (p. 195). This study employs the focus group discussion method as part of the data collection process as it can provide the researcher with insights on the nature of a programme and participants (Krueger, 1994). Another advantage of focus group discussions is that the information gathered from such a discussion may also be used by both the teacher-collaborators and the researcher to make a specific and defined decision at a designated point of time during a study.

The purpose of using the focus group discussion method for the participants is also to create a more conversational feel to the session but still provide a structure. Focus group discussions can also promote synergy in the participants that often unearths information that is difficult to reach in individual memory (Kamberelis & Dimitriadis, 2011, 2018). In addition, focus group interviews are more practical given the constraints of a tight school curriculum schedule for the teacher-collaborators. More importantly, the strategic use of focus groups will align with the emancipatory intent of the participatory action research segment of the research process to “inhibit the authority of the researchers and to allow the participants to ‘take over’ and ‘own’ the interview space” (Kamberelis & Dimitriadis, 2005, p. 903).

Participant Observation

Participant observation is used to refer to “research that involves social interaction between the researcher and the informants” (Taylor & Bogdan, 1998, p. 24). The purpose of employing participant observation is to allow the researcher to build and broaden theoretical insights in the on-going process of data collection. Data and insights from the observations can lend more focus to the individual as well as focus group interview sessions that will be conducted subsequently in the review of the implementation plan as part of the action research cycle of look, think and act (Stringer, 2008).

Document Collection

It is acknowledged that non-technical literature such as letters, biographies, diaries, reports, newspapers, catalogues and a variety of other materials can be used as data to supplement the other research methods for data construction (Corbin & Strauss, 2008). In the case of a school, the school programmes, catalogues, websites, annual reports, magazines, and notes of meetings can be rich sources of data for a study.

In this study, documents produced by the teacher-collaborators in the form of programme plans, programme booklets, minutes of meetings, and hand-outs for the students were collected as part of the data construction process. Documents were also obtained from MOE on their revised physical education syllabus which has an outdoor education component.

Ethics

The data collected from the teacher-collaborators will be protected and secured at all times. The teacher-collaborators will be assured that only the researcher and his supervisors will have access to the raw data and their identities will be protected through the use of pseudonyms. Their names will be removed from the data generation forms to protect their privacy.

Data Analysis Methods

Data analysis commenced early in the project with the first data collected during the initial individual interview. The results of the data analysis guided subsequent data collection efforts (Corbin & Strauss, 2008). The four steps of the constant comparative method for data analysis as outlined by Maykut and Morehouse (1994) were used for the analysis of the data collected as shown in Figure 10 below. This approach is inductive as the findings from the data collected will emerge from the data itself from a process of inductive reasoning. This is in contrast to the deductive approach where relevant variables for data collection are predetermined via hypotheses and grouped according to predetermined categories (Maykut & Morehouse, 1994).

Step 1: Inductive category coding and simultaneously comparing units of meaning across categories

Step 2: Refinement of the categories

Step 3: Exploration of relationships and patterns across categories

Step 4: Integration of data yielding an understanding of people and settings being studied

Figure 10. Constant Comparative Method of Data Analysis (Maykut & Morehouse, 1994)

Step 1: Inductive category coding and simultaneously comparing units of meaning across categories

The transcribed text from the interviews, focus group discussions and participant observations were coded indicating the type of data, source of data, and the page number of the particular data set (pages of a transcript) before being photocopied to identify the various sources they originated from. The photocopied transcripts, were cut up, and used to identify and divide the data into chunks or “units” of meaning pasted onto 5 inches by 8 inches index cards. Each new unit of meaning was compared with other units of meaning and then grouped thematically into a category with similar units of meaning. If there was no similarity, a new category was formed.

Step 2: Refinement of the categories

Refinement of the categories involved the process of writing a rule of inclusion using a propositional statement (Taylor & Bogdan, 1998) which is a general statement of fact that conveys the meaning in the data cards grouped under the same category name. The rules of inclusion stated as propositions aim to reveal the learning of the phenomenon that is being studied (Maykut & Morehouse, 1994). Once the rules of inclusion were completed for a category, another code known as the category code was developed and placed on the data cards. The development of the rules of inclusion allow the data cards that fit the rule to be categorised under that rule and those that do not fit are then categorised under a miscellaneous category. When all the data cards were categorised, a review of the categories was

initiated to check for any overlap or ambiguity. Adjustment, refinement and redefinition of rules was done. The end result of this step was a set of propositional statements that are the rules of inclusion for each of the categories developed.

Step 3: Exploration of relationships and patterns across categories

The purpose of this step was to examine closely the set of propositional statements that have emerged from the earlier analysis to see whether two or more of these statements are connected or can stand alone.

Step 4: Integration of data yielding an understanding of people and settings being studied

The last step of the Constant Comparative method is the write up usually in narrative form of the phenomenon studied based on the understandings derived from the data analysis. Maykut and Morehouse (1994) contend that the writing up of the research is part of the process of data analysis as “pondering the substance and sequence of the report requires a rethinking of the data, often yielding new insights and understanding” (p. 145).

Reliability, Validity, and Triangulation of Data

For the data collected to be considered accurate, the key conditions of reliability, validity, and triangulation have to be taken into account. Reliability refers to the accuracy of the data collected. Validity refers to whether the data reflect the phenomenon they claim to. Reliability and validity are commonly used in quantitative research and are rooted in a positivist perspective (Golafshani, 2003). However, Denzin & Lincoln (2011, 2018) argue that in the interpretivist paradigm in qualitative study, terms like credibility, transferability, dependability, and confirmability should replace the usual positivist criteria of internal and external validity, reliability and objectivity. In contrast, Morse, Barrett, Mayan, Olson, and Spiers (2002) and Creswell (2013) argue that to attain rigor in qualitative research, validity and reliability are still appropriate concepts. Golafshani (2003) also suggests that though reliability and validity are treated separately in quantitative research, these terms are not viewed separately in qualitative study.

Similar to quantitative research, triangulation is an often used strategy by researchers to establish and test validity and reliability of the data collected in qualitative research (Golafshani, 2003; Sagor, 2011). Triangulation is generally referred to as a process of using multiple perceptions to clarify meanings and interpretations (Stake, 2005). Triangulation may include multiple methods of data collection and data analysis and the methods chosen in triangulation to test the validity and reliability of a study depend much on the criterion of the research. However, Merriam (1998) cautions that although the procedure of triangulation using multiple sources and independent investigators for establishing validity in case studies was established more than 40 year ago, it might still produce data that are inconsistent and contradictory. In contrast, Silverman (2006) suggests that different sources of data could be combined to help the researcher make better sense of the data.

Three aspects of the research process which may contribute to validity and reliability are the use of: (1) multiple methods of data collection; (2) building an audit trail; and (3) member checks (Maykut & Morehouse, 1994). In this study, reliability will be achieved through the use of an inquiry audit where the supervisors of the research project and informed readers will be used to confirm the data analysis process. An audit trail with records of the original transcripts of the interviews, focus group discussions, field notes, and the documented process of the Constant Comparative Method used in the data analysis was made available to the research supervisors to allow checking for the reliability of the study. Validity was built through the use of multiple methods including individual as well as focus group interviews and persistent observation during the programme. The use of member checks where the participants checked the accuracy and interpretation of their transcripts was also employed during the data collection and analysis phases.

Reflexivity

Reflexivity in qualitative research involves the researcher's reflection about his/her role in the research study and personal background, culture and experiences. As part of my reflexivity, I have described in Chapter One my background, culture and experiences in education. I have also highlighted my research orientation earlier in

this chapter. These elements also shape the researchers' interpretations of the data collected such as the themes they advance and the meaning ascribed to the data (Creswell, 2014). In using the qualitative methods of observation, focus groups, and interviews, it is important to recognise the relationships between the participants and myself, and the influences that we exert upon each other. In addition, as posited by Humberstone (1997), the researcher in outdoor education should "not only be interested in the actions, views and beliefs of teachers/instructors/providers and their pupils/students/staff, but also expect their own actions and beliefs to be open to scrutiny" (p. 7). Corbin and Strauss (2008) also highlight that "the researcher's feelings and responses are inevitably conveyed to the participants who may react to these responses by continually adjusting their stances as the interview or observation continue" (p. 31). Hence both the participants and researcher are co-constructing the research in terms of the data collection (Corbin and Strauss, 2008).

Hammersley and Atkinson (1997) add that the researcher must work with whatever knowledge he/she has while "recognising that it may be erroneous and subjecting it to systemic inquiry" (p. 15). They regard it as usual that a research report should include a reflexive account of the activities, dilemmas and tensions encountered during the research. Similarly, Delamont (2002) contends that the concept of reflexivity should be deployed at all stages of the research, from design to writing it up. In this study, I have kept a journal of my reflective thoughts, emotions (anxieties, tensions, dilemmas) and decision making during the process of the project which contribute to the report.

Limitations of Study

This study is a qualitative inquiry involving a case study of two secondary schools in Singapore. The findings and interpretations of the research project are specific to the two case study schools. Thus, one limitation to the study is that the findings may not be generalised to other schools in Singapore. As stated by Ashley (2017), generalisation to larger populations is not a strength or key intention of case study research. Moreover, a case study may only provide a partial insight into the phenomenon being studied as it is captured and interpreted at a particular time, place and circumstances. Hence, future research even with the same phenomenon

under study in the same school may not yield the same findings because the agents and structures of the school such as school leadership, staff members and students may be different.

Another limitation of this study is the relative engagement of all the participants in the study. Similar to many research projects, I rely on the goodwill of all the teacher-collaborators to actively participate in the research project. While I had felt the goodwill of the vast majority of them, there are a few whose actions often led me to suspect their true beliefs in the project. For instance, I had to postpone the interview with one participant twice due to his no show at the earlier prearranged time.

According to Giddens (1984), the teachers' knowledgeable ability is strongly connected to the continuation of their social practices. This is useful in explaining the discrepancy between the teachers' beliefs and intentions prior to designing and implementation of the place-responsive pedagogy in outdoor education and their actual implementation of it. It represents a limitation of this study.

Chapter Six: Exploring the Context of the Case Study Schools

Introduction

This chapter presents the findings of phase one of the research study. It examines the prevailing knowledge, beliefs and practices of the teachers of outdoor education in the two case study schools prior to the adoption of a place-responsive pedagogy. The data was collected through semi-structured individual interviews and focus group discussions conducted in October 2012, and materials and publications such as newsletters and camp booklets from the two schools.

Six teacher-collaborators in BSS and five teacher-collaborators in CSS were interviewed in this phase. The BSS team comprised three PE teachers, two science teachers and a geography teacher with two males and four females. The CSS team comprised three PE teachers and two science teachers with three males and two females.

As explained in Chapter Five, the questions for the first semi-structured interview and focus group discussion (see Appendix C) sought to find out how the teachers conceptualised their practice and the extent of their beliefs and knowledge of outdoor education.

Discovering the themes

As highlighted in Chapter Five, the approach adopted in the data analysis was to work inductively with the field observation notes, semi-structured individual interviews, and focus group discussions. I also used the notes written during and after the semi-structured individual interviews and focus group discussions to capture my initial impressions and intuitive responses to these sessions. The written notes were useful to capture other visual cues such as the mood, language tone, and body language of the teacher-collaborators during the interviews and focus group discussions. In developing the themes, I repeatedly read through all the transcripts

for the individual interviews and focus group discussion until I was satisfied that I had gained in-depth knowledge of the contents. Bryman (2008) refers to this as 'theoretical saturation' of data, a term that is now generally used to refer to the process of gathering and analysing data till the point where no new insights are being observed. Next, I identified blocks of text that contained comments by the teacher-collaborators associated with key words/themes that emerged in response to the research questions. For instance, research question one sought to find out the knowledge, beliefs and practices of the teacher-collaborators in outdoor education prior to the adoption of the place-responsive approach. I grouped comments of the teacher-collaborators that were related to knowledge, beliefs and practices. This process was repeated for the other teacher-collaborators. A large butcher's paper was utilised for this process so that I could trace the extent in which a comment made by one teacher-collaborator was shared by other teacher-collaborators. By blocking similar comments together, I identified the patterns that surfaced and the themes that subsequently emerged. This whole process was completed with the guidance of my primary supervisor who also provided feedback on the process and outcomes as a form of confirmability. I will discuss the themes that emerged as I present and analyse the findings.

Case Study One: Base Secondary School (BSS)

The Value of a Supportive Environment

The data gathered from both the individual interviews and focus group discussions indicated that the school environment in BSS clearly supported the provision and delivery of outdoor education. All the teacher-collaborators in this study cited the positive school culture such as the supportive school leaders, willing staff and students in participating in the outdoor education programme.

Hwei summed up the various aspects of the school environment which were deemed conducive to the delivery of outdoor education.

The support of the school leaders is one. We are fortunate to have school leaders who also see the importance of outdoor education and they give

us enough funding and resources to carry out the programmes. Secondly is the team of teachers who are willing to go through training. I mean it is ideal if we have people who are really into outdoors themselves but when we don't, we need teachers who are at least willing to carry out these programmes. So I am quite fortunate... Thirdly, for us, it is also the school culture. The teachers or students alike - somehow the outdoors seems to be a very natural thing to them. If you come up with an outdoor programme or something to do that is outdoors in nature, you don't get a lot of fuss or like they don't want to do. So it is a culture, somehow they will just do it. They just go through it.

(Hwei, Individual Interview, October 2012)

As described by Hwei, the support of the school leaders, adequate funding and provision of resources, willing teachers and students and the positive school culture helped to promote outdoor learning. This pro-outdoor learning environment in the school was substantiated by all the teacher-collaborators. Another contributing factor is having a team of young staff who were willing to do the outdoor activities such as hiking and camping. The teacher-collaborators also believed that the school culture of putting all the new secondary one students through an adventure camp as part of their orientation to the school helped to set their attitudes towards outdoor education. This was done at the beginning of their secondary school life. Lastly, Hwei posited that having adventure facilities such as a climbing wall and challenge ropes course situated in a strategic part of the school compound helped to serve as a visual reminder to the students of the value of outdoor education.

Another example of support by the school leaders was in the availability of professional growth and development opportunities for the teachers, including outdoor education. This support was extended, even to the teachers who were not directly in charge of planning and implementing the outdoor education programmes. Peng, as one such teacher, described her positive experience in getting support from the school in outdoor education.

I don't feel that my role as an outdoor educator has been suppressed. I feel that I am able to grow and despite me being a subject head in

physics and so on, I am still given the opportunity to organise programmes that are outdoors related. Even this year when some of the student leaders are going to Australia for a week of outdoor trip, I am also going. So in that sense, I feel well supported that I do not have to concentrate on my focus area (Physics).

(Peng, Individual Interview, October 2012)

Peng also highlighted the ample opportunities and time off given by the school for her to participate in professional development courses, workshops and seminars in outdoor education organised by the MOE and related organisations. This was despite her non-direct involvement in the design and implementation of the outdoor education curriculum in her school which fell under the purview of the PE department staff.

As expounded in Giddens' structuration theory, the structures in the school in terms of the rules and resources such as the policies, leadership support, provision of resources can either constrain or enable the agency of the teacher-collaborators in their outdoor education practice. In this case, the pro-outdoor education environment and sufficient support given by the school leaders have exerted a positive influence on the teacher-collaborators who in turn reproduce the pro-outdoor education environment in the school.

The next section will examine the teacher-collaborator sources of knowledge in outdoor education.

The BSS Teacher-Collaborators Sources of Outdoor Education Knowledge

Both individual interview and focus group data suggested that the teachers' acquisition of knowledge and experience in teaching outdoor education could be categorised into three aspects: formal training, informal training, and the enculturation of knowledge from peers and others.

Formal training in outdoor education

Outdoor education is not formally included as a module for both the pre-service PE and non-PE teachers at the National Institute of Education of the Nanyang Technological University (NIE-NTU). The NIE-NTU is the sole teacher training and certification institute in Singapore. However, trainee PE teachers are required to attend a five to nine-day course conducted either by Outward Bound Singapore or the MOE Outdoor Education Section which provides them with a direct experience of outdoor education programmes. The three PE-trained teacher-participants in the school for this project had attended this course. In contrast, the non-PE teachers were not exposed to any formal outdoor education training during the pre-service teacher training in NIE-NTU.

To bridge the gap in the teaching of outdoor education, since it is not offered as a formal module in NIE-NTU, the MOE offers professional development courses, workshops, seminars and conferences in outdoor education for in-service PE teachers. These courses are organised and conducted by either the MOE Outdoor Education Section or the MOE Physical Education and Sports Teacher Academy (PESTA). The availability of such courses is complemented by the MOE policy which entitled every teacher in local schools to utilise at least 100 hours per year for their professional development to encourage continual learning on the job. In addition, funding support is given to schools for all teachers to attend the professional development courses, workshops, seminars and conferences that are organised by the various MOE-funded set ups and affiliates.

However, finding the time to attend the professional development courses and workshops could be challenging. Some of the teacher-collaborators found it difficult to find time to participate in outdoor education courses due to clashes with curriculum lessons and other duties as highlighted by Yan below.

It is quite tough to find courses in the TRAI SI (MOE online course application system) sometimes to match other criteria like time tabling, to match curriculum time (don't affect curriculum time) and other duties even during the holidays.

(Yan, Individual Interview, October 2012)

Informal training in outdoor education

Both the two male teacher-collaborators described their army training during their National Service days which had influenced their knowledge and belief in outdoor education. Full-time National Service for two years is mandatory for all male Singapore citizens on attaining the age of eighteen. For Wai, he picked up his outdoor abseiling skills whilst training as a member of the prominent Commando Unit in Singapore. Similarly for Ray, his interest in nature was sparked while training overseas in the wooded areas of Australia and in Pulau Tekong, a restricted offshore island of Singapore, with his Armour Unit as described below.

(My) first contact with nature didn't quite come very early. I didn't grow up in the kampung (traditional house normally built without basic amenities such as water, electricity and toilets within it). So it's like I didn't really have the experience of staying in a kampung whereby you really can interact with nature. But it is only through the army...when I went to Australia for training and Australia is a very different environment from Singapore. Because I was in Armour (Unit), we travelled by tanks. There were times when we stopped overnight out in the woods, see the sky surrounded by trees and all that, I find it is very beautiful. Also, because the army allows you to access into areas that a lot of people could not really access. Say a place like Pulau Tekong - it is actually quite nice. This is not a place that you see often in Singapore. So it is actually through the army that I first got interested in "Hey nature is actually quite interesting." From then on, when I got into University, I started volunteering for Sungei Buloh (Nature Reserve) and things just carry on.

(Ray, Individual Interview, October 2012)

Here Ray spoke of his lack of contact with nature while growing up in the urban concrete jungle in Singapore. He got his first intimate contact with nature during his army stint when he had to undergo his training in an offshore island, Pulau Tekong, which has some pockets of the natural environment intact. The positive

experience of nature that Ray had during his army training ignited his interest in it so much so that he went on to serve as a volunteer in the Sungei Buloh Nature Reserve after his army stint. Structures can enable or constraint the agency of the actor. In the case of Ray, the structures in the form of mandatory and regular army training spent in the outdoor environment, enabled him to develop an attachment to nature and exercise his agency through voluntary work in the Nature Reserve.

Enculturation of knowledge through peer influence and teaching

Three of the teacher-collaborators alluded to the enculturation of knowledge of outdoor education through the influence of colleagues and practitioners elsewhere. Keng described how her initial view of outdoor education, as comprising mainly of adventure-based activities such as climbing, was changed by her colleague who told her that it could comprise any learning outside the classroom. Wai, as a beginning teacher in the school, was very sceptical of what outdoor education was about until he was asked to observe the other PE teachers teaching it during PE. His knowledge of outdoor education was gained partly through the enculturation process of watching the practice of his peers.

So for me initially, I asked why I am put under this programme to observe with three teachers already in. The rest of the staff said: "You don't have to do anything. I just want you to watch. Not so much to watch the students climb". Initially, in the first few sessions, I just watched the students climb and I am like "Quick! Quick! Go for the blue one!" and all that. After a while, when I actually sat back and said nothing, then I realised what the rest of the staff are doing. They are not so interested with whether the students overcome the elements or not. That struck me, apart from the safety that they are watching, the negotiation and the thinking process that they tried to put in the kids is actually what the programme is about. If you ask me, it is very much like a chef with a taste bud that nobody in the world has. You can teach someone to cook but they cannot have the same taste bud as you. I would say it is really about the delivery and if the training is not sufficient, for example me: If I didn't realise it, then I would have just

serve as another person who teach you how to tie ropes and teach belaying. Pretty very much like how I did it... as a service provider.

(Wai, Individual Interview, October 2012)

Here, a change in Wai's beliefs and practice of outdoor education could be seen through the enculturation process of examining the teaching pedagogy of his peers. He learned through his peers that the focus of the outdoor education lessons is on the learning process and not merely the acquisition of skills. That their knowledge is influenced by their peers' teaching showed that this is an important aspect of the enculturation process in the practice of outdoor education. The exposure to different practices elsewhere could also influence the knowledge and thinking of the teacher-collaborators. For example, Yan described how her preconception of outdoor education, as comprising mainly outdoor adventure pursuits such as rock climbing, high ropes elements and so on, was changed significantly during an overseas visit in 2011. Her view on its role had since broadened to include learning about the ecosystem.

There was a change... When we first started this in the school, I would think that all these things like rock wall climbing, high ropes stuff to me is outdoor education...Last year when I went to Melbourne, Australia, we visited an outdoor school. It provided me with another insight into outdoor education.

(Yan, Individual Interview, October 2012)

In summary, the knowledge of the BSS teacher-collaborators in outdoor education was derived through a combination of past personal experiences in the outdoors, formal and informal trainings received and the enculturation process of modelling the practices of peers both locally and overseas. The enculturation process appeared to be the most influential factor in the knowledge acquisition of the teacher-collaborators. Petrie (2009) found through a review of the professional development literature that there is evidence that teacher learning often occurs in an informal, serendipitous way.

Beliefs of the BSS Teacher-Collaborators in Outdoor Education

Thorburn and Gray (2010) suggest that to investigate teachers' beliefs about their teaching, it is necessary to explore more than just the immediate circumstances they are in. There is also a need to examine the local contexts and the teachers' past experiences. This is because teachers' beliefs and practices are a mark of their past and the present experiences and influenced by their local context. Hence, their beliefs and practices should be analysed within the wider social processes and constraints of everyday life. In the previous section, I examined the influence of the teachers past personal experiences and enculturation process in forming their knowledge of their practice of outdoor education. In this section, I will examine how their past experiences together with their perceptions of power and their capacity to act (agency) influence their beliefs of outdoor education. These beliefs include:

- Outdoor education is more than just doing adventure activities and the development of activity skills;
- Outdoor education should provide opportunities for the students to exercise autonomy and ownership of the outdoor education programme;
- Teacher-run outdoor education programme is more beneficial than an out-sourced programme;
- The perception that PE teachers are suited to do OE;
- The need to measure and evaluate effectiveness of OE programmes;
- Outdoor education programmes in school are backed by theories in practice (incorporation of OE theories in practice).

Outdoor education is beyond doing adventure activities and development of activity skills

While all the teacher-collaborators viewed adventure activities and activity skills development as components of outdoor education, they also believed in the need to go beyond these. The learning of activity skills such as rock climbing, high ropes elements and orienteering were taught mainly during the outdoor adventure

education modules in secondary three PE lessons and cohort camps. All the teacher-collaborators also viewed the inculcation of school values - resilience, responsibility, respect, confidence, and compassion, social emotional competencies, leadership and character development - as essential components in their practice. They perceived that participation in outdoor adventure activities in a group setting will develop these school values. Peng illustrated this focus on the inculcation of values.

We taught about resilience, about compassion. Resilience because a lot of times things don't go according to what we have planned... they must see through what they have planned out. Some form of resilience and compassion because it is not just doing it on my own but doing it with a group of people. With a group of people the natural tendency is they got to take care of each other. So compassion is another one. All in all, if they do it frequently enough it will lead to confidence, where they get a bit better and better in their skill sets, whether is it cooking, kayaking, or climbing. There is also 'responsibility' where it is not just for themselves, it is not about being responsible for the action they took for the people around them but also for the environment like do not litter.

(Peng, Individual Interview, October 2012)

Here, Peng saw the role of outdoor education as both the acquisition of activity skills as well as development of the self and others. She also highlighted a role in taking care of the environment though this was confined to the rhetoric of 'do not litter'. The need for outdoor education to include learning about nature, eco-system, and/or the natural environment was also highlighted by some of the teacher-collaborators. For example, Yan spoke of her surprise below in finding out that her daughter thought that chicken eggs are produced in the supermarket.

To me now it is really knowing about... the eco-system, how the raw materials come about, et cetera...If you asked a young child in Singapore where does the chicken egg come from, probably they will tell you NTUC (Supermarket). So to me it's very wrong...we forget

that the kids really don't know where the egg comes from. So to me that is a very sad thing. I still believe that this kind of fundamental knowledge and skill is something we cannot do without. Eggs don't come from NTUC... My daughter did answer that way when I asked her.

(Yan, Individual Interview, October 2012)

Here, Yan felt that outdoor education can play a role in educating the students on the eco-system and how it works. She saw it as an essential aspect of outdoor education beyond the focus on activity skills, personal and social development. In summary, the teacher-collaborators believe that outdoor education is more than just doing adventure activities and the development of activity skills.

Need to provide autonomy and ownership to the students

The teacher-collaborators also believed that there is a need to provide opportunities for students to exercise ownership and autonomy in outdoor education. They believed it was important to let students decide their own course of action and to find out for themselves the answers to the problems presented during an outdoor education programme. Keng considered it a challenge to design an outdoor education project that students would take ownership of. She spoke of her preference for the students to take ownership by identifying and addressing the issues or problems themselves rather than for the teacher to do so. Hwei also highlighted the need to let the students make decisions, even if the decisions were wrong, so that they could learn, as long as the safety boundary was not breached. In a similar vein, Ray reiterated his belief of the need to encourage students to find things out themselves.

I think as educators, we sometimes probably don't let the students find out the answers for themselves. Even I sometimes tend to go into this mistake of so called providing the answers whereas, I think outdoor education is to encourage them to seek out their own answers or find things out on their own. Let's say in this place, instead of straightaway

of telling “they must do this and this to protect this and this”. I find it is more meaningful for them to seek out their own answers.

(Ray, Individual Interview, October 2012)

Here Ray alluded to the deeply rooted Eastern education and cultural belief that the role of the teachers is to transmit their knowledge and to provide all the answers for the students. The learners in Eastern education culture are expected to be told what to do so as to avoid making mistakes (Beames & Brown, 2005). According to Beames and Brown (2005) this represents the incongruence between the Western notion of experiential education and Chinese culture. They suggested that:

The Eastern education model conflicts with two widely accepted premises of experiential education: groups figure it out for themselves and participants feel in control. An Eastern style of instruction sees mistakes in a negative light, whereas Western experiential education theory views mistakes as positive opportunities for learning and growth. (Beames & Brown, 2005, p. 75)

The teacher-collaborators felt that there is a need to change the mind-set of both their colleagues and students that mistakes are frowned upon. They believed that a journey-based outdoor learning programme is a potential platform to empower the students with the autonomy to make decisions and mistakes and learn through the process of making them. In order to enact this, the teacher-collaborators believed that there is a need for them to take control of the design and delivery of the cohort camp programme rather than to outsource it to a private service provider.

A teacher-run programme is more beneficial than an out-sourced programme

The current provision in BSS is to outsource their outdoor education camps for the secondary two and three student cohorts to external service providers. Hwei, Wai and Yan, who were all responsible for planning and organising these camps, shared the same sentiment by Atencio et al. (2014) and Beames and Brown (2013) on the potential impact of the student learning when the camps are contracted to a service provider. They felt it is better for them to self-run the camps than to outsource them

so as to better deliver the desired learning objectives.

Honestly, if you ask me, I go through a vendor, I say ok 'I need to run this outdoor adventure camp, I want to do this entire list of things in hope of achieving this, they will tell you ok you want to do this, what's the budget, they will try to match, they will try to clear RAMS (Risk Assessment and Management System) first and all the administrative issues. Then they will look at how to reach the so called objectives you want. So let's say this time it is about leadership. I mean I ran two camps with INNOTREK (Service provider) – leadership and outdoor adventure camp is the same programme! And if you say "oh it is about the delivery"; then honestly speaking, I will say that those delivering the programme are not the programme coordinators, it is actually the part-timers from PESS, from SPE, from the Polytechnics who are running the show. Honestly, often I think the camp has become an outlet more than a tool or medium to achieve certain purpose that we set it up for.

(Wai, Individual Interview, October 2013)

Here Wai shared his experience as an ex-staff member of an outdoor service provider to reiterate his belief that outsourcing an outdoor education camp may not be effective in achieving the desired learning outcomes that the school has set. He attributed this mainly to the largely untrained personnel delivering the programme. In Singapore, these were often drawn from the pool of part-time tertiary students who are not trained as outdoor educators. Wai also alluded to the predictable and calculable manner in which the camp experiences will be delivered by most outdoor service providers commonly seen with the intent to maximise efficiency. This focus on ensuring the "minimisation of risk (financial and physical) and the maximisation of customer satisfaction and return on investment (both time and monetary)" (Beames & Brown, 2013, p. 124) by the contracted service providers may appear sound but could result in the potential disjuncture with the broader curriculum intent and reduction of more authentic learning opportunities. The need to provide more student-centric learning opportunities was highlighted by Hwei below.

Last year was the very first year we had a school-wide sabbatical so we did the Sec three camp but it was entirely vendor (service provider) run. We didn't like it...I think we can add in a lot more learning outcomes. So this year we are exploring mini expeditions... We are thinking of class-based mini expeditions that the students will plan for themselves. (Hwei, Individual Interview, October 2013)

Here Hwei expressed the disappointment of her team with the service provider who was not able to bring about some of the desired learning outcomes that the programme is suited for. They realised the need for the teachers to exert more control in the design and management rather than to leave these to the service provider. They also recognised the potential benefits in providing the students with more autonomy to plan some aspects of the camp programme.

Martin and Ho (2009) found in their research on the perception of teacher competency in the delivery of outdoor education in schools that the majority of the Singaporean outdoor educators surveyed expressed that the outdoor education field requires specialist knowledge and skills (88%), and many (39%) felt unsure about their qualifications and experience to teach outdoor education. An outcome of this perceived lack of qualifications and experience in teaching outdoor education by the teachers could be seen in the vast majority of schools contracting their cohort camps held at the MOE adventure centres to external outdoor service providers (Ho, 2013). The programme conducted by the contracted service providers at the MOE adventure centres tended to display similar characteristics to those identified in the McDonaldisation thesis by Ritzer (2013). Beames and Brown (2013) note that for teachers with busy workloads and an increasingly crowded curriculum, the use of external service providers may appear sensible. However, they questioned the messages that are conveyed in the decision to opt for provision of this nature and the impact on student learning. They highlighted “the reduction of ‘authentic learning’ opportunities, the potential disjuncture with broader curriculum intent, the promotion of decontextualised ‘abstract knowledge’ and the continued silencing of place as pedagogical implications of McDonaldisation in the provision of outdoor education” (Beames & Brown, 2013, p. 125). Similarly, Atencio et al. (2014)

expressed their concern on how increasingly schools' outdoor education and cohort camp programme are sub-contracted to service providers. They argued that this approach may result in the lack of control and ownership by both schools and teachers over the programme.

Perception that PE teachers are suited to do OE

There appeared to be a common perception by some of the BSS educators that PE teachers are more suited to teach outdoor education. This perception is reinforced by the narratives of Yan and Wai.

I would think that I take it (outdoor education) on like quite naturally as a PE teacher and it's also new. And to me, it is also something that we didn't really learn at NIE back then. NIE is more on the skills and games. So maybe at that age, at that time I don't see why not to learn something new and teach it.

(Yan, Individual Interview, October 2012)

Yan's assumption that it was natural for PE teachers to take on the role as an outdoor educator seemed to match the view of the MOE who had made outdoor education a formalised module constituting between 10% to 20% of the PE syllabus for all levels of primary and secondary students from 2014 onwards (Ho et al., 2015). This is despite the fact that outdoor education had not been formally taught as a pre-service training module for PE teachers in NIE. Wai believed that PE teachers in the school would be able to inculcate the values and character building amongst the students that the service provider would not in a camp.

I think that as far as possible it should be run by PE teachers. My training with the external vendors suggested that really it is just facilitating a camp. I think it is very different although the activities may draw similarities but the function of it is totally different. In PE, I mean at least what we are doing here is really emphasizing the character and overcoming things that you normally wouldn't do or put yourself in. So in individual circumstance at the camp, really it's about getting

the numbers going. It's really about just trying it. It's really quite dependent on the facilitator. So if the purpose is to just attempt the elements, then I think it is quite purposeless. But if it is to bring out something else and the students are aware that it can be purposeful.

(Wai, Individual Interview, October 2012)

Here, Wai similarly perceived the PE teachers to be better suited to run the outdoor education camp compared to the outdoor service providers due to their emphasis on the process of learning as opposed to doing an activity itself. He suggested that PE teachers are better able to focus on values inculcation in a camp. However, this perception that PE teachers are better suited to deliver outdoor education than service providers or other subject teachers could be a fallacy. As highlighted by Atencio et al. (2015), PE teachers in Singapore are regularly tasked with teaching this subject without subject-specific training and specialisation. They suggested that positioning outdoor education within the broader PE framework in Singapore is problematic as PE can represent a limiting and constraining view of learning outdoors. Similarly, Lugg (2004) has also raised her concern that the dominant use of PE teachers to teach outdoor education has led to the approach of developing adventure activities as practice rather than other approaches.

Need to measure and evaluate effectiveness of outdoor education programme

The need to have some form of assessment and measurement of the learning outcomes from outdoor education programmes was a dominant issue that was debated by all five teacher-collaborators. However, Hwei, Peng, and Wai also acknowledged that while it is important to have an assessment of the student learning outcomes in outdoor education, it would be difficult to do so.

Wai, who sparked the discussion on assessment and evaluation of outdoor education programmes, believed there was a need to measure how successful these programmes are so as to replicate and share best practice. Similarly, Keng maintained that if someone wanted to run a programme, he/she would want to know how effective it was. Hence, she saw a need to evaluate the programme. She posited it as very challenging to effect changes within a short period of time especially in

instilling values education in the programme. Likewise, Ray felt that assessment was not so much about judging the success of the programme but more of a yardstick for the school to judge how well they had done and how much they might have deviated from the objectives. He suggested that feedback from students might be a viable option to measure the outcomes of the programme.

In terms of measurement of the student learning outcomes in an outdoor education programme, Hwei shared that the school had previously done an assessment of this aspect through a quantitative study (IGNITE study) using the Life Effectiveness Questionnaire (LEQ) by Neill, Marsh, and Richards (2003). The school had used the LEQ findings to evaluate and make changes to the outdoor education programmes. The discussion on the need to measure the effectiveness of their outdoor education programme reflected the tendency of some of the teachers to want to conform to a neo-liberal educational standard of measurement and assessment similar to the other subject disciplines. Humberstone and Stan (2012) cautioned that “various social analysts have highlighted the ways in which neo-liberal ideologies, consumption and governance are changing the nature of not only formal education, but also informal education; away from pupil-centred learning towards production and outcomes, rather than these being in balance” (p. 184). This suggests that overly focusing on the assessment of outcomes may cause the educator to lose sight of the importance of delivering student-centric learning, a sentiment shared by the BSS teacher-collaborators in the focus group discussion.

OE programmes are backed by theories in practice

The three teacher-collaborators from the PE department perceived the outdoor education programmes in the school as being on the right track as they were apparently backed up with theories, pedagogies and research evidence. By theories in practice, the teacher-collaborators referred to the action research in the outdoor education programmes the schools have undertaken previously to improve their practice.

I think you could say that our programmes are slightly more backed up with theories and pedagogies, and perhaps even research evidence as compared to when we first started with just the pursuits of adventure

and then doing it based on what we like to do. Now that we learned a bit more, then we realised certain things, so we started to improve the programme based on some kind of theoretical backing.

(Hwei, Individual Interview, October 2012)

Here Hwei referred to the application of the quantitative study findings undertaken by the PE department in 2008, as evidence that the programme was backed up by research. This IGNITE project used the LEQ instrument to measure the change in the social emotional learning competencies of the secondary three students who participated in the ten-week outdoor adventure education module in PE programme.

In summary of their beliefs, all the teacher-collaborators highlighted the need for outdoor education to go beyond the acquisition of outdoor skills and values education to include learning about nature, eco-systems and the natural environment. They also posited that greater agency should be provided for students to exert ownership of the outdoor education programmes. The need to evaluate the effectiveness of the programme and measure the desired student learning outcomes were deemed as important by the BSS team as well. The BSS team also perceived a teacher-run camp programme to be more beneficial in terms of the desired student learning outcomes than a programme ran by a service provider. Some of the teacher-collaborators believed that PE teachers are better suited to deliver outdoor education than external service providers. The three teacher-collaborators from the PE department believed that the outdoor education programme in BSS is backed by theory and research.

Practices of BSS Teacher-Collaborators in Outdoor Education

The data gathered from BSS suggested that the focus of their practices tended towards adventure-based pursuits, and the fostering of values and personal and social development. This was despite their knowledge and beliefs that outdoor education should include nature and environment education.

Focus on adventure-based programmes, personal and social development in practice

The planning and implementation of OE programmes was placed under the purview of the PE department who ran the following programmes:

- Secondary one orientation camp covering adventure-based activities, outdoor cooking, and heritage trail walks
- Secondary three adventure camp covering team building activities, challenge ropes course, abseiling and rock wall climbing, kayaking and hiking
- Secondary Three Outdoor Adventure Education module in PE covering rock wall climbing, high challenge ropes course, knots tying, and orienteering
- Student leadership camp for the student leaders.

All the above-mentioned programmes used predominantly adventure-based outdoor activities as the means to deliver their desired student learning objectives. All three PE teacher-collaborators believed that doing adventure activities in outdoor education was the means to develop values, social emotional competencies and character of the students. This view was supported by the other three teacher-collaborators, Keng, Peng and Ray, who also saw the inculcation of values as an important aspect of an outdoor education programme. The teachers believed that their practice of outdoor education in BSS has evolved from the initial focus on the acquisition of technical outdoor activity skills of the students through ‘learning by doing’ as illustrated by Peng and Wai below.

I think for me when I learned more and more about outdoor education, it has really moved away from just skill-based, just doing all the supposedly scary stuff like high elements and stuff. That is what I always thought outdoor education, like what OBS is, is what the outdoor is about. Slowly, we are moving into the soft skills and then now we are looking, talking about “for” the environment.

(Peng, Focus Group Discussion, October 2012)

Here Peng expressed her initial perception that the way the school ran its programmes is similar to Outward Bound Singapore (OBS) where the focus is predominantly on outdoor activities, skill, and personal and social development. She opined that there is a need to include the environmental education aspect. This view was supported by the other teacher-collaborators who commented that the outdoor education programmes in the school have shifted their focus from the acquisition of activity skills to values inculcation. Values such as self-awareness, resilience in overcoming challenges, social awareness, responsibility, and respect for others and environment were cited as learning objectives of the programmes by the teachers. These were aligned to the school values of resilience, responsibility, respect, integrity and compassion.

Despite their beliefs in the need for outdoor education to go beyond the focus on adventure activities and personal and social development, teacher practice indicated otherwise. Adventure-based activities utilising artificial structures such as the challenge ropes course and climbing and abseiling walls formed the dominant mode of outdoor education programmes in Singapore schools. This finding is similar to that by Atencio and Tan (2016) who found that the Singaporean PE teachers in their study prioritise high elements (challenge ropes courses) and adventure activities within residential camps.

Other forms of outdoor learning

Other than the outdoor adventure education programmes conducted by the PE department staff, the two science teachers, Keng and Peng, adopted outdoor learning in the form of outdoor cooking and the outdoor playground for their physics lessons as part of their objective to make the lessons more hands-on and fun. Nature walk at the Botanical Gardens as part of the science lesson was also carried out.

Summary

The knowledge of the BSS teacher-collaborators in outdoor education was derived through a combination of past personal experiences in the outdoors, formal and informal training, and the enculturation process of modelling the practices of peers both locally and overseas. The enculturation process appeared to be an influential factor in the knowledge acquisition of the teacher-collaborators. The teacher-collaborators believed that the outdoor education programme in BSS is backed by theory and research. All of them highlighted the need to go beyond the acquisition of outdoor skills and values education to include learning about nature, ecosystem and the natural environment. They also posited that greater agency should be provided for students to exert ownership of the programmes. The need to evaluate the effectiveness of the programme and measure the desired students' learning outcomes were deemed as important by the BSS team. The BSS team also perceived a teacher-run camp programme to be more beneficial in terms of the desired student learning outcomes than a programme ran by a service provider. Some of the teacher-collaborators believed that PE teachers are better suited to deliver outdoor education than external service providers.

In summary, the knowledge, beliefs and practices of outdoor education by the teacher-collaborators in BSS is geared mainly towards outdoor adventure education. Whilst, the BSS team believed in the need for outdoor education to go beyond the acquisition of activities skills, personal, social and life-skills development to include learning about and for the environment, this is not reflected in their current practice.

Case Study Two: Crest Secondary School (CSS)

The CSS Environment

The interview and focus group discussion data indicated that CSS has a conducive environment that supported the provision and delivery of outdoor education. All the teacher-collaborators cited supportive school leaders such as the principal and head of departments who provided the necessary resources in terms of funding and

human resource to implement the outdoor education and EFL programmes. The positive school culture with committed and willing colleagues and students who were enthusiastic in participating in the programmes were also highlighted, in particular, where the principal clearly played an active role in encouraging the use of outdoor and experiential learning platforms in the school. The job scope of the head of PE was expanded by the principal to include outdoor education to drive further development in this area. This support by the school leader was backed with human resource and financial resources given to the PE department to organise the various outdoor education programmes.

What I'm trying to do is, next year we will send the girls for the OBS (Outward Bound Singapore) course. We used to send the girls every year to Outward Bound Lumut (Malaysia), but we stopped... We stopped it for a while because the cost has been increasing. But then the Principal talked through about the "whys". "Why do you want to stop it?" I said: "Because of money lah". She said: "But money shouldn't be an issue. If you think it is good then you should carry on."

(Choo, Individual Interview, October 2012)

Here Choo used the example of sending their students to participate in an Outward Bound programme to explain that her school leader would be supportive of a programme, regardless of financial constraints, as long as the teacher could rationalise its benefits for the students.

The CSS Teacher-Collaborators Sources of Outdoor Education Knowledge

Similar to BSS case study, the acquisition of knowledge and experience in the teaching of outdoor education by the team of CSS teacher-collaborators could be categorised into three categories: formal training, informal training, and the enculturation of knowledge from peers categorised. Formal trainings included the outdoor education course attended by both pre-service and in-service teachers. These courses were organised by NIE-NTU, MOE and related organisations. Informal trainings were in the form of personal participation and experiences in

outdoor activities.

Formal training

As explained in the earlier section, outdoor education was not formally included as a module in the post graduate diploma in teaching in PE course as well as the post graduate diploma in teaching for the other academic subject in NIE-NTU. However, the trainee PE teachers were required to attend a five to nine-day outdoor educator programme conducted either by the OBS or the MOE Outdoor Education Section which provided them with a direct experience of adventure education activities such as Project Adventure type of team building activities, challenge ropes course, rock-climbing and a land and sea kayaking expedition. They were also given training on risk assessment and management of outdoor activities when planning a student camp. Choo participated in the nine-day outdoor educator course in OBS while Dan and Maran did a workshop on risk assessment and management in conducting outdoor activities in NIE-NTU.

Except for Choo, none of the other teacher-collaborators have attended any outdoor education course organised by either MOE or its affiliate training organisations for in-service teachers. Choo attended a 3-day facilitator course in outdoor education organised by MOE which entailed reviewing and facilitating learning from an outdoor experience. The course content included exploring what facilitation was and the role of the facilitator, approaches to teaching and learning, different learning styles, active reviewing techniques, practical considerations when facilitating outdoor activities in MOE adventure centres, and using different resources, terrain and space.

Choo, Maran and Yun had also participated in training courses offered by other organisations that are related to outdoor education. Maran, for instance, attended the Youth Expedition Leader Course conducted by the National Youth Council (NYC). This course enabled the participant, upon completion of the training, to organise and lead a team of youth volunteers on an overseas community involvement project that was subsidised by the NYC.

This school actually sent me for this YEP Expedition Leader course. That's another five days course where they taught a lot more to do with understanding the environment. Because that is more a service learning project so it is more of understanding the needs of others and respecting nature and those sorts of things.

(Maran, Individual Interview, October 2012)

For Maran, the YEP Expedition Leader Course had taught him the need to understand the environment, the impact of humans on nature and the need to respect nature while on an expedition. For Yun, her experience in a 3-day adventure training course conducted by the Police Academy was mainly negative. The course comprised activities similar to those in Outward Bound as part of her induction as a teacher-officer for the National Police Cadets Corp.

I still remember that time when I reached there then my instructor said that "Now (that) you have to call me "Sir", you know we are no longer friends". So that three days were pretty hellish. It is very scary. I mean the worst was the night hike. He brought us out to the jetty and then we have to walk back in - For girls it was a pair, guys it's one and it is, I think, at five minutes interval. It is very scary.

(Yun, Individual Interview, October 2012)

This negative experience of outdoor education gave her the impression that the delivery of outdoor education is meant to be regimental to bring about physical and mental toughness and resilience. Her initial perception was that outdoor education was all about adventure-based challenges such as rock climbing and overcoming physical obstacles. It put her off teaching it although she believed in the notion that it doesn't have to be all about adventure activities. She believed that it could include subject-based learning with lessons taking place outside the classroom in an authentic setting.

Besides formal training received in teaching outdoor education, the teacher-collaborators also acquired their knowledge of outdoor education through informal training in the outdoor activities they attended.

Informal training

The teacher-collaborators shared that some aspects of their acquired knowledge in outdoor education were a result of their own participation in outdoor activities such as camping, trekking, kayaking and sailing. This past and present participation in outdoor activities had enabled them, especially the PE teachers, to be comfortable enough to teach outdoor education though they did not have formal instructional qualifications and certification in it. Informal training in the form of their own participation in outdoor activities also enabled some of the teacher-collaborators to understand the various roles that outdoor education can play besides developing activity skill.

When I was young, I participated in ODAC (Outdoor Activities Club) and I have been in ODAC for like almost... even when I was in NUS (University), I was involved in ODAC, so almost six adult years of my life I was in outdoors. I love trekking and I wish that students can also...and I feel that when I go to nature, I feel that I experience the environment more... and nowadays, kids should do that. I mean you can see them littering around, they don't appreciate the environment so by doing this...hopefully they will know... by teaching them how to take care of the environment, how to experience nature.

(Dan, Individual Interview, October 2012)

Here Dan understood that outdoor education could go beyond the provision of outdoor activities to include aspects of environmental and nature education. Besides informal training in the outdoors, the teacher-collaborators also acknowledged the influence of their peers in enhancing their knowledge of outdoor education.

Enculturation of knowledge through peer influence and teaching

The enculturation of knowledge gained through assimilating the practice of other outdoor educators was a strong influence for some of the teacher-collaborators. Choo, Dan, and Yun shared the strong influence that the outdoor educators have on them in some of the outdoor education programmes they attended. This influence from peer practices of outdoor education can be both positive and negative as highlighted in Choo's narrative of her negative and positive learning experiences in the Outward Bound Singapore and the Outdoor Pursuits Centre New Zealand course respectively.

I think from my own experience in Outward Bound Singapore, it is quite a torture – nine days with your PE classes and it's really a push... So to me, I learnt a lot from that one... I was partnering some guy, who every time I turn around, his paddle is like not moving... It was really the resilience and - should we carry on? Should we hit our target? Our group didn't make it to the bridge. We turned back and the other group went on. So it was a lot of time to reflect as well... It taught me to think about what kind of person I am. I said, wah, very siong (tough), I wanted to give up already. It's not boring, it's just tough like how am I going to make myself run every morning up and down the terrain. So it's a lot of self-reflection and I thought that if we give our girls the skills plus a push in this area; that is the resilience plus the character building. Yeah and also I feel that the girls nowadays, they don't get that exposure with their parents.

(Choo, Individual Interview, October 2012)

Here, Choo's acquisition of knowledge in outdoor education is influenced by the tough training she received in OBS. She perceived the use of tough physical training applied by her instructors during her OBS course as effective for resilience and character building. She postulated a similar need as her OBS instructor to push her students physically and mentally in order to toughen them up. On the other hand, Choo also gained new insights on how outdoor education could be delivered in a broader way from her school's participation in an overseas course at the Outdoor Pursuits Centre in New Zealand (OPCNZ).

So after doing some research, I mean, because we have been doing a lot of adventure-based programmes over the years, and then we also talked about environmental education like in New Zealand when we went there. They talked about the environment; they talked also about Leaving No Trace. They also did the adventure stuff, and then they also talked about...experiential outdoor education...When we went to New Zealand, they actually get the girls to reflect after every activity... It is like facilitation of outdoor learning, you know like active reviewing. So there are three components in Outdoor Education for me: one is adventure; and then one is environmental and the other one is experiential. ... We put all our programmes into these three components.

(Choo, Individual Interview, October 2012)

The study trip to OPCNZ enlightened Choo to the importance of including environmental education perspective and reflections on experiential learning. Her knowledge of outdoor education was further influenced by the way the instructors in OPC delivered the outdoor activity skills and education for the environment and facilitated the reflections of the learning experiences.

In summary, the acquisition of knowledge in outdoor education of the CSS teacher-collaborators was through a combination of participation in personal outdoor pursuits, training courses and enculturation of peer influences and practices in the outdoors. Personal experiences in the outdoors had an impact on the acquisition of the knowledge of the teacher-collaborators. Both positive and negative personal experiences can influence knowledge and subsequent beliefs in how outdoor education could be practiced. For instance, the predominant practices of outdoor education as adventure activities that has shaped the past experiences of the teacher-collaborators have in turn created a strong influence on their knowledge(s), beliefs and teachings in outdoor education.

Beliefs of the CSS Teacher-Collaborators in Outdoor Education

Outdoor education is beneficial to students' personal, social and life skills development

All the teacher-collaborators believed that the outdoor education programmes in the school were beneficial to the students. They viewed the programmes such as the secondary two EFL overseas adventure-based camp and secondary three EFL overseas community involvement project as useful in developing soft skills and life skills. Physical and mental toughness (resilience), character building, and understanding self and others were values they felt could be developed in such programmes.

I think the EFL is one programme that they always remember. I mean if you ask them at the end of the four, five years, EFL is one programme that they always mentioned.

(Yun, Individual Interview, October 2012)

Here, Yun illustrated the beliefs of all the teacher-collaborators of the significant impact of the EFL programme on the students. They opined that the outdoor experiential learning component of the EFL has contributed to the impactful experiences for the students.

Outdoor education is more than adventure activities

While all the teacher-collaborators viewed adventure activities as an essential part of outdoor education, they also believed in the need to go beyond this aspect.

As long as it (outdoor education) is outside the classroom, it is not restrained to the classroom, it is definitely known as the outdoors... For example, even for my science lesson, if ... I am teaching them about flowers, for me I won't teach the lesson in the classroom, I bring them out to the garden and ask them to observe the flowers and give me name of the parts. To me that is also part of outdoor education.

(Dan, Individual Interview, October 2012)

Here, Dan acknowledged the role outdoor education can play across the subject disciplines. He believed that it is not confined to merely doing adventure-based activities. Similarly, Yun felt that outdoor education lessons could be taught across the various subject-disciplines.

Other than like say the camping and all that, I think it can also be subject-based where you bring the learning or teaching out of the classroom. So they can actually draw data from outside, let's say they can do interviews, they can actually see for themselves or even make inferences when they go to a bigger place. They can come up with a hypothesis and from there, they can see things and then they can make certain conclusion for themselves rather than what we tell them it's supposed to be or just searching on the computer.

(Yun, Individual Interview, October 2012)

As illustrated by Dan and Yun, the teacher-collaborators adopted a broad view of outdoor education. They believed in the value of integrating the subject-based disciplines with outdoor learning and recognised outdoor adventure education as only one aspect of outdoor education. The three PE teacher-collaborators, Choo, Dan and Maran also believed that direct experience and getting to know nature and the environment were also important aspects of outdoor education.

School has sufficient outdoor education programmes

There was a common perception by the teacher-collaborators that the school had more than sufficient outdoor education programmes as reflected through the EFL programmes and subject-based outdoor learning trips. Huat illustrated this as a new staff member in the school.

I mean coming from a junior college into a secondary school, I see a lot more being done in terms of outdoor education. And I think another thing is in the interactions with the students - one thing that when we talked to them, something that they recall better is if they have an anchor to a particular experience that they had outdoor. Let's say for EFL, a lot of them will make references to what they go through in EFL. Or let's

say if you brought them to certain locations for Geography or Science or whichever, they actually make linkages back to when they were there. So I think it is effectively in that sense. It is actually a memory anchor. (Huat, Focus Group Discussion, October 2012)

Here Huat alluded that not only were there adequate provisions for outdoor education in CSS, the teachers were also able to create a memorable experience and link the learning outdoors back in school.

Need to narrow down the programme and make it more in-depth

Three teacher-collaborators, Choo, Dan and Maran, felt the need to narrow down the outdoor education programme and to create more links with other subject disciplines. Rather than merely doing the outdoor activities, the programme should go more in-depth into getting the students to learn more about the environment they are in. However, Choo, Dan and Maran also reiterated their concerns that there were too many subject-based worksheet assignments imposed on the students during the outdoor experiential learning segment of the EFL programmes. The school had designed a student booklet with worksheets to get students to write down their subject-based learnings together with reflections of their outdoor experiences during the camp. The teacher-collaborators felt that there was too much of a pen-and-paper component especially in the subject-based component (science and mathematics) of the secondary two EFL adventure-based camp. This view was supported by the other two teacher-collaborators, Huat and Yun, the two staff overseeing the project work segment of the EFL programmes. They recognised the need to ensure that the students' joy of learning in the outdoors is not put off by too many worksheet assignments.

Choo highlighted the examples of the secondary one EFL Learning Journey and the secondary two EFL overseas adventure-based camp programme to explain her concern with the use of worksheets to measure learning.

So, like our secondary one Learning Journey is local and we do things like (making) Sand Shoes, NE (National Education) Journey to the

Museum – getting to know our own country first. It's more about NE slant but it is also experiential. Does it mean that we need to ply them with worksheets and linkages and how do we know that they are actually in sync? How do we know that our objective is met? Do we only make them do worksheets so that we know that they have been paying attention and therefore we are successful? Or is it enough to just bring them through the programme without having every segment having something to evaluate or for them to jot down their thoughts?

(Choo, Focus Group Discussion, October 2012)

So it is a matter of choosing which activity or which item where you want to fit it in. It's like in the past we used to 'do Flying Fox' (Zipline) and then 'Flying Fox' got one formula down there inside the worksheets. One question is like: "Will you go down faster if you are a heavier or lighter person and why?" So she (teacher) puts the formula and taught it in the Maths class and then they have to calculate the weight and all that. But whether they really go down faster or slower, I don't know lah! So things like that went in. But that's why we thought that "Aiyah, we shouldn't have so many of these things and just enjoy ourselves being outdoors." You know just be grateful that we are out here. And there is this part where they are not in the classroom studying and how do we create linkages back. So there is this sitting on a fence, like a 'see-saw' - we want more for the girls but we also don't want to kill them and bring down the whole atmosphere. And there is just so much that you can pump into them. So it's a fine balance. We have to choose and pick what we want to push and what we don't want.

(Choo, Focus Group Discussion, October, 2012)

All the teachers agreed that there shouldn't be a need to complete all the assignments through the pen-and-paper method. A balance needed to be struck between the adventure-based learning and subject-based learning during the EFL camp but the issue for them was how to get this balance. The team suggested alternatives such as having small group work and discussion to solve the problems

posed rather than being overly focused on pen-and-paper work assignments. The two science teachers suggested that the main focus for the secondary two EFL camp should perhaps be on adventure-based learning.

Overseas locations more suitable for adventure-based programmes

The three PE teachers, Choo, Dan, and Maran, perceived outdoor adventure education as more suited to be delivered overseas. The lack of a natural environment and the small size of Singapore were the commonly cited reasons for the apparent unsuitability of local places for the EFL programme. Additionally, the EFL coordinator, Choo, highlighted internationalising the students to develop their global awareness and cross-cultural skills as the main purpose for the major outdoor education programmes being carried out overseas. However, while she acknowledged that it was unnecessary to go overseas if the camp was based fully on doing the adventure education activities, she did not address the rationale why these activities were included in the overseas camp in the first instance. Dan, on the other hand contended that there weren't many local places to do outdoor adventure education, hence the need to do the overseas trips.

Maran viewed an apparent limitation of living in a developed country such as Singapore in developing the students' awareness of global issues such as poverty and inequality.

No, it's outdoor but it is within Singapore where you know the environment well. Learning is not as great because the culture - more or less you know the culture because you are dealing with Singaporeans. And the differences, the way Singaporeans live their life is; you generally have common knowledge of how the Chinese are, how the Malays are and how things happen in Singapore, the politics in Singapore; all these things you already know. But when overseas it is slightly different. The living conditions are different. So the learning is slightly better. Sometimes when we talk about slums, you know people are having a difficult time in slums and people actually live life in slums and stuff like that. As a Singaporean student I won't even understand actually without going over and looking at the actual slum probably

Cambodia or Laos. If I don't look at a slum I wouldn't exactly explain this is how; you know you can talk about it smells, you know it smells bad and the area is filthy and all that. You can mention all that. Probably they may see it in the pictures on the internet but they cannot experience it until they go there. So that's why I am saying it is a richer experience if we do it overseas when these elements are all taken care of and the learning is a lot richer.

(Maran, Focus Group Discussion, October 2012)

For Maran, overseas programmes were richer in learning than local programmes as the living conditions, environment and culture were different. Here, he cited the lack of slums in Singapore as an example of why the school opted to send their secondary three students on an outdoor experiential and service-learning project overseas.

In summary, all the teacher-collaborators believed in the benefits of outdoor education for the development of personal, social and life-skills. They recognised the need to go beyond the adventure activity skills and life skills to include other aspects such as nature and environmental education. They perceived overseas locations as more suited to the delivery of outdoor education due to the affordance of the natural environment, unlike highly urbanised Singapore. They also asserted that the provision of outdoor education in CSS is both broad and sufficient though lacking in depth. Whilst they believed in the potential of integrating various subject-based disciplines with outdoor education they also realised the need to strike a good balance.

Practices of CSS Teacher-Collaborators in Outdoor Education

Major programmes are conducted overseas

The major outdoor education programmes in CSS, which were classified by the CSS as the secondary two EFL adventure-based camps and secondary three EFL community involvement project, are conducted overseas. The delivery of these programmes was outsourced to service providers. This has created an issue of limited control over the conduct of these programmes in meeting the desired

learning outcomes for the students as acknowledged by the teacher-collaborators planning these trips.

Major programmes are outsourced to service providers

None of the teacher-collaborators had technical instructional skills in adventure activities despite the outdoor education programmes in the schools being mainly adventure-based learning. This lack of formal training and qualification in teaching outdoor activity skills led to the outsourcing of all the major programmes such as camps and overseas adventure learning trips to service providers as illustrated by Maran.

Because of MOE regulations...we have vendors for each event. For example; if we are going for a camp we have vendors to plan the route for us, we have vendors to do the all the high challenge elements because you need to have the qualification before you can conduct belay school and stuff like that.

(Maran, Individual Interview, October 2012)

The lack of technical instructional skills in the outdoors had resulted in the CSS team relying on the appointed private service providers to determine the programme to a certain extent as the latter has some control over the location and type of provision of the adventure activities. This has confined the role of the teacher-collaborators during the adventure camp to that of a facilitator.

Focus on adventure activities and values inculcation in practice

While they believed in the need to go beyond the provision of adventure-based activities and values education to include nature and environmental education this was not reflected in the programmes currently offered to the students. As was the intent of the outdoor education programme within the Education for Life (EFL) curriculum, all the teacher-collaborators emphasised the learning of values and life skills such as self and social awareness, resilience and character building as key tenets of the programme learning objectives. Maran provided a good example of the emphasis on personal, social and life skills in outdoor education.

EFL is basically to create awareness of yourself, about your shortcomings as well as your strengths. To make a person aware of what he is capable of and be aware of one's ability which is sometimes not so easily captured in academic studies. So in outdoor education, what we are trying to promote is be aware of yourself, your capabilities and your strengths. Also be aware of your weaknesses - that is self-awareness. Then at the same time as we communicate those loft goals and get involved in the environment and all that, they get sort of educated. You see sometimes text books education is not enough I would say. So when they go overseas, they get to see things like how deprived some people are overseas which we normally will take things for granted. So it also helped serve as a national identity for us, the belonging to the nation increases to a certain extent when we see that we are actually a lot better off than so many others. It will also create a sense of compassion in students who are taking part in all these activities - to be compassionate, to realise and be globally aware of what is happening around the world. Also putting in their share as in when we are involved in service learning which is also a component somewhere in our EFL – a small component where you learn how to do service.

(Maran, Individual Interview, October 2012)

Here, Maran illustrated the inculcation of values as an important aim of the EFL programme. He believed in the value of outdoor learning in creating authentic learning situations in comparison to the limitations of text-book learning. Maran also perceived the apparent benefits of an overseas learning trip in creating a sense of belonging and national identity after performing a service project in a developing country.

Subject-based outdoor learning

In CSS, subject-based outdoor education programmes included incorporating some components of English, physics, mathematics and geography into the students' project work assignment during the secondary one to secondary three EFL

programmes. The school had also organised subject-based local and overseas field trips. Some examples quoted included the science field trip to collect water samples for monitoring at the Science Centre, and the humanities department trip to Trengganu, Malaysia to collect endangered turtles and turtle eggs for conservation purpose.

Place-based learning programme in school

The teacher-collaborators expressed that they had little or no knowledge of place-based learning. When asked to share what they thought were examples of place-based learning that had taken place in the school, Choo and Maran quoted both the previous secondary two EFL overseas camp and the secondary three EFL overseas community involvement project as forms of place-based learning. This was because the students had to research the language, food, culture and society of the host country before they embarked on the trip and they participated in the hands-on activities with the villagers such as local cooking and basket weaving. They also interviewed the villagers.

I think our EFL at sec two is not really all there but we have already made changes to it for next year. Actually, it used to be all adventure-based but I think four years ago we incorporated a village's visit where they actually visited the villagers. They learned a bit about the Malay's cooking, the "kuay kuay" (dessert cakes), as well as the traditional Arts and Crafts. Even our sec three's programme also, they used to do basket weaving. So even for the sec threes, we have this project called the "Problem-based Learning". So the "problem-based learning" question is based on the water village in Bintan. So the kids must go there and ask questions with the locals and find out more of the demographics of Bintan and why is it that this water village can stay this way. How has the government actually helped the water village? You see some are old houses, some are new houses, some have tiles, some are wooden. Do they know why? How come the villagers can live side by side with the rubbish just thrown out of their houses?

(Choo, Focus Group Discussion, October 2012)

Here Choo revealed that the secondary two and secondary three EFL overseas programmes in the past had some forms of place-based learning such as home-stay in the villages, interviews with the villagers, local food cooking and craft-making. However, the PE teacher-collaborators also acknowledged that adventure-based activities had been the main focus of these EFL programmes and not place-based learning and saw the need to incorporate other aspects of outdoor learning.

Summary of CSS Case Study

The CSS teacher-collaborators' acquisition of knowledge in outdoor education was through a combination of participation in personal outdoor pursuits, formal and informal training, and enculturation of peer influences and practices in the outdoors. Personal experiences in the outdoors had an impact on the acquisition of their knowledge. Both positive and negative personal experiences can influence knowledge and subsequent beliefs in how it could be practiced. For instance, the predominant practices of outdoor education as adventure activities that has shaped their past experiences have in turn created a strong influence on their knowledge(s), beliefs and teachings. The school practice of integrating the various subject-based disciplines with outdoor adventure learning has also influenced their knowledge(s), beliefs and practices of outdoor education.

The CSS team believed in the need for outdoor education to go beyond adventure activities skills, personal, social and value education to include environmental education. However, this was not reflected wholly in their practice in their programme which focussed predominantly on adventure-based activities. The CSS team also believed their outdoor education programmes in the school are sufficient though they felt there is a need to make them more in-depth. In contrast to the BSS case, the CSS teacher-collaborators believed that outdoor adventure education is more suited to be delivered overseas. They perceived a lack of natural environment and the small size of Singapore as apparently unsuitable for their adventure-based programmes. Hence, the major outdoor education programmes are carried out overseas. The CSS team also had little or no prior knowledge of the concept of place-based learning and how to enact it in the PE curriculum.

Chapter Seven: Teachers' Perspectives on the Design and Implementation of Place-Responsive Outdoor Education

Introduction

In Chapter Six, I addressed the first research question on the teacher-collaborators' prevailing knowledge(s), beliefs and practices of outdoor education in the two case study schools prior to the adoption of a place-responsive pedagogy. In this chapter, I will present the data analysis of phase two of the project which examines the teacher-collaborators' perspectives following the design and implementation of the place-responsive pedagogy in the outdoor education programme. Specifically, this chapter will address the second and third research questions which are:

RQ2: What were the teachers' perspectives of designing and implementing a place-responsive approach?

RQ3: How did the implementation of place-responsive outdoor education pedagogy impact on the teachers' knowledge, beliefs, and practices?

The data was collected through field observations, semi-structured individual interviews and focus group discussions between April to August 2013, and materials and publications from the two schools. The materials included the camp programme booklets, outdoor education programmes and newsletters in the two schools. Nine teacher-collaborators in BSS and four teacher-collaborators in CSS were interviewed in this phase. The number of teacher-collaborators in BSS increased from six during phase one to nine in phase two following the suggestion of the team leader, Hwei and discussions that ensued. The additional three PE teachers were included as they were actively involved in the pilot of the place-responsive programme. The BSS team felt that the findings from the research project would be incomplete without their participation. The discussions and decisions made by the team throughout the research project phase was an essential part of the collaborative nature of the action research methodology adopted. Written consent was obtained from the additional three teacher-participants, Bao, Fay and Vaughn for their participation. On the other hand, the CSS team was reduced to four

teacher-collaborators comprising two physical education teachers and two science teachers. One teacher, Maran from the CSS team decided to drop out of the research project as he was not actively involved in the design and implementation.

The discussions held with the two teams of teacher-collaborators on the composition of the members and the design and implementation plan were done collaboratively. These were an essential component of the action research methodology which attempted to provide agency for the teacher-collaborators to decide for themselves the design and implementation process and review. For BSS, the team of teacher-collaborators decided to pilot a place-responsive programme in the annual secondary three student cohort camp. This camp is held over three days (see below for camp programme) and typically based at a residential adventure centre managed by the MOE. For CSS, the team decided to pilot the place-responsive approaches in the Education for Life (EFL) programme for the secondary two student cohort. This EFL programme for the secondary two students included a project work segment and a four-day overseas based residential camp experience. The approaches were incorporated in the semester long project work segment coordinated by the two science teacher-collaborators and in the camp segment managed by the two PE teacher-collaborators.

Case Study 1: Place-Responsive Outdoor Education Pedagogy in BSS

The initial discussion on the potential design of the place-responsive approach for BSS took place during the second day of the professional development session held in November 2012. The content of the two-day session is described in Chapter Five (see Appendix D). I facilitated the session. The team of nine teacher-collaborators was formed for the purpose of piloting the approach in the school programme. The team decided to pilot the approach in the three-day camp for the secondary three cohort comprising approximately 280 students in March 2013. The individual interview and focus group discussions were conducted in April and May 2013 following the implementation of the place-responsive camp in March 2013.

Perspectives of teacher-collaborators of the design and implementation of the place-responsive outdoor education programme

In this section, I highlight the perspectives of the BSS teacher-collaborators in designing and implementing the place-responsive programme in their school. This addresses my second research question.

As described by Bao during the post-camp focus group discussion, the BSS team had initially wanted to run their 'standard' annual secondary three student cohort camp. They referred to their 'standard' camp as one whereby the students would be based at a residential adventure centre. The typical activities included rock wall climbing, abseiling, and a ropes challenge course. The teacher-collaborators decided that this was not an enticing option after a reconnaissance trip made to an adventure centre. This was because the school has similar adventure-type facilities such as the rock climbing wall and high ropes challenge course. Following the professional development workshop conducted by the researcher, Hwei and Wai shared their learning on the place-responsive approach with the other teachers from the PE department who were planning the annual secondary three student cohort camp. The team found the idea of introducing a place-responsive approach in the camp potentially appealing. Discussions were held using the weekly Professional Learning Community (PLC) platform that the school has in place for the professional development of the teachers on the camp design and implementation process. Inputs from the researcher were sought at subsequent meetings of the camp planning committee on aspects of the place-responsive approaches that could be incorporated into the camp programme.

The annual camp for the secondary three student cohort was scheduled for three days. The team decided that rather than participate in a residential camp as was the case in the previous year, the experience for the students in 2013 would consist of:

Day 1 Preparation for class journey and presentation of plan for the routes to be taken, safety and risk management, logistics, accommodation, food and financial arrangements by student camp commandant and

members of sub-committees.

Day 2 Depart from school on a journey to chosen places and campsite.

Day 3 Journey back to school as an entire cohort.

As there were seven classes with an average size of 40 students each, seven walking trails and seven heritage/nature sites were identified by the team. The classes drew lots to select a walking trail and heritage/nature site they would be embarking upon. A class could opt to make a mutually consented switch of the selected walking trail and heritage/nature site with another class if they wished to after the selection. The drawing of the lots took place immediately after the first briefing session given to the students by Bao, two months before the camp. The students were briefed by Bao on the planning process for the camp. The list of place-responsive assignments for each group of students to select from was handed out. A teacher-collaborator was assigned to each class after the briefing by Bao. Up to four PE sessions were utilised formally for each class to plan and prepare for the camp, including the place-responsive assignment. The students also met on their own to do their planning outside the formal preparation periods. Bao also scheduled fortnightly meetings with the elected student camp leader from each class for updates of their planning and preparation.

The first day of the camp, held in March 2013, was based in school where the elected student camp leader and various sub-committee members presented their implementation plans for the journey to be undertaken over the following two days. Following the presentations, the food sub-committee members proceeded to the local supermarket to purchase and distribute the food for the camp. The rest of Day 1 was spent packing and preparing for the camp journey. All the classes started their journey from school after their morning assembly in Day 2 to embark on various walking and heritage trails around the island. As there were close to 280 participating students, the classes finished the day camping in tents at one of two designated coastal campsites. These two public campsites were selected instead of one, to lessen the impact on the environment. On the final day, all the participants journeyed to a common meeting point at a nature reserve area before walking back to school together as a cohort. Depending on the route set by the students, the

walking distance covered in the two-day journey varied between 20 to 30 kilometres.

Each class was accompanied by at least one of the teacher-collaborators in the project together with either one or both of their form teachers. I was assigned to a class managed by Keng and Fay during the camp. As this was the first time that the cohort embarked on a journey in seven different locations, the school decided to hire a service provider to provide logistical support such as two additional supervisors per class, tents and outdoor cooking stoves for the overnight camp. The two supervisors assigned to each class by the service provider were mostly tertiary students doing part time work. Their role during the camp was mainly to accompany the students and guide them to set up the tents and provide the cooking utensils for the camp.

According to the teacher-collaborators, the presentations by the student sub-committees on Day 1 served to provide the opportunities for the students to develop their leadership qualities and life skills:

I thought the leadership component was quite clear because the first thing that we did with the class was that we formed the Exco (Executive Committee). So we give them the responsibility, the ownership of what they wanted from the camp, all those sort of things. So they took a lot of initiatives. They did a lot of research and planning on their own. And we gave them little platforms for them to share with us. So that leadership component, I think it came up quite a fair bit especially during the camp itself. Life-skills were really through the research of the place, finding out how to get from one point to another, planning of the makan (food). We thought that the kids nowadays really lack these skills even in planning a simple expedition.

(Bao, Focus Group Discussion, April 2013)

As highlighted by Bao, the teacher-collaborators saw the potential and opportunity for more student agency to be exerted through the adoption of a place-responsive pedagogy. Hence, the decision was made to allow the students to take charge of

their own camp planning and implementation. In doing this, the teacher-collaborators aimed to fulfil the other objectives of developing the school values in the students. These values include: resilience, responsibility, respect, confidence, and compassion, social emotional competencies, leadership and character development.

The design aspects of the place-responsive segment of the camp were helmed by Hwei, the team leader, with inputs from the team members including the researcher. The operational matters in terms of guiding the students in their camp planning, and overseeing the financial and logistical aspects of the camp was helmed by Bao, the Camp Commandant. In terms of the design, the team were modest in setting the objectives for the place-responsive segment. These objectives were to get the students to know more of the places they were to visit through prior research done before the trip and to learn from direct experience through some activities related to these places.

The teacher-collaborators described their thoughts on their attempt to adopt the place-responsive concept as more of a trial without much expectation of its outcomes.

I think because we were fairly new to the whole concept of the pedagogy, for us, it was more of a ‘try out and see’ process. It was really to see how much the kids would respond to such a thing. So our main objective was to provide the class with at least some understandings of the places that they will be visiting. To be honest, we didn’t really have any expectation because we really wanted to see how that part would turn out.

(Hwei, Individual Interview, April 2013)

Before the camp, I think at times there is an element of uncertainty because it’s the first time we are doing it. Even for the kids also... After all, I am quite sure for many it’s the first time that the camp is being run this way.

(Yan, Individual Interview, April 2013)

Here, Hwei and Yan reflected the teacher-collaborators' perceptions that the adoption of the place-responsive programme was like a venture into the 'unknown'. There was an element of uncertainty and anxiety on how it might turn out. They believed that their knowledge and understanding of place-based pedagogy was limited. Thus, their expectations of the learning outcomes to be derived from the place-responsive segment of the camp were not high. Notwithstanding this, three broad design concepts were adopted by the team. The first design concept was to craft a list of place-based activities and/or assignment topics so the students could choose to learn more about the places they were visiting. This was done using the four signposts proposed by Wattachow and Brown (2011).

Signpost 1: Being present in and with a place

Opportunities were provided for the students to have direct experiences of the places they visited and to explore and develop their thoughts of it through these experiences.

Signpost 2: Power of place-based stories and narratives

The students were assigned in groups of three to research and share stories and narratives about the place either prior or during the trip depending on the nature of the assignment. They were also encouraged to share stories of their encounters with the place during the post camp reflection period.

Signpost 3: Apprenticing ourselves to outdoor places

The incorporation of some activities led by the students, for instance: bird watching, identifying the flora and fauna of the place. This aimed to get them to engage and learn from the place through using the five senses and sharing their thoughts of the place experiences.

Signpost 4: Representation of place experiences

This involved getting the students to share about their experiences of the place through various modes including: story-telling, reflective writing, creating poetry photography sharing, drawings and sketching.

The measures taken to include elements of the four signposts in the design was

intended to facilitate learning of the places they encountered during the camp. In order for this to be achieved, the students were divided into groups of three to tackle their chosen activity or topic which they had to present either before, during or after the camp journey depending on the nature of the assignment. The teacher-collaborators had to do research on the routes and sites chosen by the students in their assigned class as well. They saw the need to equip themselves with the knowledge and stories of the place in order to formulate the assignment topics for their students. Their research on the place-based stories and narratives also served as a back-up for sharing with the students if the latter failed to do their assignment on the places they were visiting prior to the camp.

The second design concept was to adopt a journey-based camp format. This is a first for the school. The 'standard' camp format used in the past, whereby the entire student cohort were based at a residential adventure centre, and participated in the same activities on a rotational basis, was discarded. The teacher-collaborators believed that the journey format would better suit the purpose of getting the students to spend more time engaging with the places they are visiting. This journey format also enabled the teacher-collaborators to explore the possibility of providing more responsibility to the students to make their own decisions on some aspects of the camp planning and implementation. It led to the eventual decision to allow the students to exert agency on how they wanted to run the camp. It resulted in the students having the autonomy to decide over the route planning, logistics, food and financial aspects of the camp.

One strategy employed in the design and implementation of the place-responsive approach was the deliberate attempt to 'slow down' the experience of the students:

Whilst on the hike, it's really about controlling the pace, slowing down the walk so that they have time to go through it a bit slower and also to stop and share about the places.

(Bao, Individual Interview, April 2013)

At every stop, the student leaders made sure that they gave time to the different groups to carry out the activities. I think that's really heart-

warming especially when they were trying to look for the birds and flowers. Looking for the animals was really quite challenging. I think the sufficient time they were given to find really helped them rather than to rush through the whole walk.

(Vaugh, Individual Interview, April 2013)

The team focused their design on getting the students to spend more time in the place itself rather than on the distance to be covered during the journey. This was done through encouraging the student leaders to plan for various strategic rest-stops along the walking route and getting the various groups assigned to share their knowledge and observations of the place. Activities such as bird watching and identification of flora and fauna complete with field equipment such as binoculars and guide books were included to 'slow' the walk and to engage with the place using the five senses. This strategy of 'slowing down' the experience is aligned with the 'slow' pedagogy of place concept advocated by Payne and Wattoo (2008) to allow more time for the students to be immersed in a place through an embodied experience.

Another strategy employed by the teacher-collaborators was to give the students the agency to determine the various aspects of the camp. This agency included the autonomy to plan and decide on the composition of the groups and class sub-committees for the camp, expedition route, food, and management of finance and resource. This was again a new approach by the school. This shift from teacher-controlled to student-controlled camp planning and execution was not without some trepidation on the part of the team members and the school administrators. The main cause of anxiety was safety. This anxiety was compounded by the fact that close to 280 students from seven classes would be engaging in various forms of outdoor activities in different parts of the country simultaneously. The team leader, Hwei, also revealed the several discussions they had with the school leaders, especially the Vice-Principal, to allay their concerns on the safety aspects. The team did this despite their own uncertainties with some aspects. However, the concerns over whether the students would be able to make the appropriate risk assessment and management decisions proved to be largely unfounded. The teacher-collaborators found the students to be generally capable of making the right safety decisions with

hardly any need for them to intervene during the camp. On the contrary, the team found the students to be overly cautious in certain outdoor situations. For instance, Hwei described her frustrations when it came to road crossing - some student group leaders prevented group members from crossing the road when the 'Green Man' sign had just started flashing.

Though some groups have to deal with unexpected situations such as heavy rain, fallen logs and closure of some roads/trails during the camp journey, the accompanying teachers found these were generally well managed by the students. For the teacher-collaborators, allowing the students to make their own decisions during the camp have yielded positive learning outcomes according to the desired school values.

Emerging Themes

A. Development of Student Agency

As described in Chapter Four, Giddens (1984) refers to agency as one's capacity to act. Agency implies power and to Giddens (1984), an agent is "one who exerts power or produces an effect" (p. 9). In designing the place-responsive approach for the camp, the teacher-collaborators had decided earlier to adopt the journey format rather than to station the students at a residential adventure centre. This journey format enabled the students to research and carry out the place-responsive activities in the places they were visiting. The intent was also to provide greater agency to the students to decide on their own planned activities in relation to place-responsive learning. An option to select a place-responsive assignment from a teacher prepared list or to propose their own place-based assignment were given to each group of three students in the class. This provided the autonomy for them to plan how to get their classmates to learn more of the place they would visit. They also decided how they intended to carry out the assignment. Getting the students to take ownership of their own learning by researching and deciding on a plan for their selected assignment was not attempted in previous camps and the teacher-collaborators viewed it as a positive move.

For instance, I got them to present about the Bukit Timah Railway Station. They will say: “Who are the one presenting?” Then they will come forward and then they will just read; although they just read out about some historical stuff. That is the basic one. And when they’re supposed to show some pictures of some railway stuffs, some actually printed pictures of some old pictures and showed them what it is about. (Peng, Individual Interview, April 2013)

Here Peng alluded to the fact that her students were diligent in doing their place-responsive assignment. Some of her students went beyond her perception of the basic level of presentation of their lesson on the place.

On the other hand, on the ground itself, what I found enlightening was that the students took the whole thing (place-responsive learning) very seriously, the leaders especially. The leaders in my class took it very seriously and they were the ones who motivated the class. And at every stop, the leaders made sure that they gave time to the different groups to carry out the activities.

(Vaugh, Individual Interview, April 2013)

Here, Vaugh also alluded to the fact that the students were taking responsibility for their place-responsive learning seriously. He was encouraged by the response of the students when given the agency to decide on their own learning.

Besides getting the students to plan their mode of sharing in the place-responsive topics that they had selected, the teacher-collaborators also decided to allow the students to exert their agency over other aspects of the camp. These include: route planning, rest points and rest times during the hike, food and sleeping arrangements, risk assessment and management plan, and finance management. This change in having more autonomy over the camp planning and implementation was something that the students were not used to initially as revealed by Hwei below. It took the students a couple of weeks before they realised they have to make their own decisions and face their consequences.

What was also interesting for me was to see how the students responded to such a camp. One example was: because we gave them a lot of decision making; the power to make decisions; you could see that they were quite uncomfortable with it at first. They kept trying to check with us. The camp being quite... I mean the decision that will impact the class in terms of safety, there's very little issue about it. So it was quite interesting seeing how they were like every decision they made they tried to check back with the teachers. And we will say "No, we are not going to help you with the decision."

(Hwei, Individual Interview, April 2013)

That the students were not used to making decisions on the camp aspects initially stemmed in part from the school structure. As Fritz (1999) posits, structure determines behaviour. The previous structure whereby the teachers made all the decisions on the camp planning and organisation becomes 'routinised' (Giddens, 1984) for the students over a period of time. In order to change the behaviour of the students to enable them to exert more agency, the previous structure has to be changed and the new structure 'routinised'. Emirbayer and Mische (1998) suggest that the development of agency has a temporal aspect to it. Priestley et al. (2012) believe that student agency would develop over time through a continual process of engagement and emergence with structural change. Hence, the students' agency will emerge over time once the new camp structure is routinised.

The teacher-collaborators believed that the opportunity given to the students to make decisions which may have led to mistakes, and even failures to complete the tasks, was something that would be beneficial for them. As Ray has alluded below, the existing culture in the school is averse to letting a student fail. He believed that there is a need for the school to prepare the students to cope with failures. Thus, he found it refreshing that the camp design required the teachers to allow the students to fail in their planning and implementation.

The fact that they are planning and attending their own camp that they are planning is quite refreshing to me. And the fact that we are told to give them the opportunity to fail also is quite refreshing. Because too

many times in school we are so used to the notion that, oh no, cannot let them fail. Students are not given the chance to learn and make mistakes, to learn from the mistakes that they made. We just want to give them the solution, let them pass through, sail through and that's it. But I think it's refreshing that we allow them to make mistakes.

(Ray, Individual Interview, April 2013)

The teacher-collaborators also found that getting the students to take ownership of planning the various aspects of the camp had other unexpected benefits such as an increasing camp attendance rate.

I was quite surprised with two things. One is the attendance issue. I think it's almost 99%. I only had five with Medical Certificates and valid reasons (for non-attendance) and one girl who fell sick on the day itself. I think it is about 274 students who went (for the camp)... Yeah, because when I checked with the Form teachers, some of them (during a sharing session) told me: "This one won't come, that one won't come." But it ended up that all of them were there. I told the service provider that I am prepared for 20 students who will not turn up but in the end I only had to withdraw two students.

(Bao, Individual Interview, April 2013)

Another was also one particular case of a girl who until Secondary Three has never attended a camp. Even in the Students Council, she always tried to skip camps. But she was quite heavily involved in the meals committee, planning and buying the food and all that. So she came along for the camp... I think giving the student ownership of the camp helped. You know if it's a normal camp I am pretty sure she will skip it again.

(Hwei, Individual Interview, April 2013)

As Bao and Hwei have described above, the attendance for the camp was higher compared to previous years. They attributed it to the ownership given to the students in the planning aspects of the camp. This had a cumulative effect of students persuading their classmates to attend the camp.

B. Enhanced Teacher Agency

In adopting the place-responsive approach in the camp, the teacher-collaborators found themselves having to exercise more agency in regard to its design and the implementation process. The design and delivery of previous camps were outsourced to a service provider with the teachers providing inputs on their desired learning outcomes for the students only. However, the adoption of the place-responsive approach for the camp required a conscious attempt on the part of the team to know and directly engage with the places they are visiting. They had to do their own research, to visit and to know the places in order to tap into the potential of the place-responsive learning.

Because I am leading on to this, I had to do my own research also. I can't just go there and depend on the students... So knowing about the place before going made me conscious of "Okay over here, I will stop. Over there, I will stop." So these are rest points but are also story-telling points. So the radar is a bit wider now.

(Peng, Individual Interview, April 2013)

For the place-responsive part, I think there was a template that was already done up. Specific to the place that we went, there is Bukit Chando and the railway track. I did some of my own reading and research to assist me to better facilitate the whole learning process of the students. I also come up with some of the questions for the students. There are standard questions that already been set but of course we add on a little bit more from each of us. So we actually add on more questions, specific to the site. So some of the questions that I put up are on photo journalism - we got them to do them because they are carrying cameras around. So I thought why not use the camera to take photos of significant places that reflect the past, present and probably the future. Basically, it evolves around the past and present and also their impact.

(Fay, Individual Interview, April 2013)

Here Peng and Fay spoke of more active involvement on the part of the teacher-collaborators as a result of the adoption of the place-responsive approach. They had to take more ownership of the design and implementation of the camp which also enabled the teacher-collaborators to be conscious of the potential learning for the students. It also enabled both the students and teacher-collaborators to know better some of the local places they have never visited.

Whilst the teacher-collaborators realised the opportunities presented in a place-responsive approach to the students' learning about cultural, social and environmental issues, they also encountered some challenges.

On my part, because the kids that I brought along, they changed the route. Every week they changed the route. So after they gave me a tentative route, I went to check it out myself. A couple of students, I heard, went to check it out themselves as well...So in our discussion even before the camp, they highlighted: "Oh, these are the things to look at and these are the stories of this place." I said "Okay, good." And the following week, they changed the route again. So again the teacher had to go down and re-recce and see maybe the route is slightly different now, the opportunities are slightly different as well. So it's really about making it opportunistic and wait, see what the actual day is like. Then on the actual day, again there were changes (laughs) and the elements like the rain and all actually brought about different place-based opportunities.

(Wai, Individual Interview, April 2013)

As Wai has alluded, to be a place-responsive educator requires time and effort to know the place to be visited in order to tap into its learning opportunities. The willingness and patience on the part of the teacher-collaborators to anticipate changes and provide time for it in the students' planning were also essential. He also commented that to be a place-responsive educator, one needs to be opportunistic about the learning. This implied having the skills to pick out the opportunities present in an ever changing environment - a considerable challenge. Providing the students with the autonomy to decide on the route to take during the

journey may also pose considerable challenges to the place-responsive educator unless he/she knows the route well.

For the place-based learning, my class went to the Tree Top Walk (Nature reserve) and Haw Par Villa (Cultural heritage site). For the Tree Top Walk, we managed to carry out the activities as there was a place, a small hut where everybody could gather. But when we were at Haw Par Villa, the sky was changing, very dark and overcast. Then it rained. It was drizzling and then it rained heavily. So at Haw Par Villa, when the weather is no good, there isn't a place for the class to come together and discuss about the topics. The group who was supposed to introduce Haw Par Villa, they really did their homework but it's really not conducive to share, as in the place itself. So it's a challenge - that means to find a place whereby the class can come together to discuss about it or to share with the class what they have found out and maybe with some other people who have other views.

(Yan, Individual Interview, April 2013)

As Yan has experienced above, exerting the agency to enact a place-responsive approach in the camp alone may not always lead to the desired outcome. Here, as described in Chapter Four, the notion of the ecological view of agency by Biesta and Tedder (2007) is a useful concept in understanding the influence of the ecological conditions on agency attainment. According to them, though the individuals may have their capacities, whether they can attain agency will depend on the interaction of these capacities and the particular ecological conditions they are operating in. Thus, it is not just the capacity of the individual to act but also the environment within which the action occurs that will determine agency. In this case, the introduction of a more place-responsive approach is dependent upon not only the teacher-collaborator's capacity and willingness to act on the pedagogical change but will also be influenced by the location and environment (structure) they are in operating in. Weather changes, limited access to certain places, the physical and psychological state of the students, and lack of preparation are some environmental conditions that could also pose a challenge to place-responsive learning, as Yan experienced.

C. Relationship Building

Unlike the typical outsourced residential camp where the service providers will adopt the primary role of planning and executing the programme, the concept of the teacher-collaborators and students taking ownership of the design and implementation of this camp programme had several benefits. Firstly, the students had more interaction and bonding time with each other through their own planning and implementation of the camp.

I think because the students take a lot of ownerships for the camp, of course the class spirit was very positive. And in the outdoor setting you see a lot of surprising things that you don't see in a classroom setting like students being able to take care of one another which cannot be seen in a normal classroom setting... They are more encouraging. They are more resilient to whatever thing that comes along their way. They didn't expect the walk to be so tough but they still completed it. They didn't expect the rain to come and it halted their plan but still they are very flexible about it. So a lot of these changes that came along the way, they just had to learn to work with it... After the whole thing (camp), I think as a whole, the class know one another a little bit better and understand each other character a little better as well.

(Hwei, Individual Interview, April 2013)

Here Hwei attributed the better class spirit, students' ability to take care of each other, and overcoming the challenges faced during the place-responsive journey, to their ownership in planning and executing it. Similarly, the other teacher-collaborators witnessed the care and concern that their students have for others during the journey and activities. Similarly, Fay (below) viewed it as a good idea to let the students plan and take ownership of the camp programme. He felt that the process of planning and executing the place-responsive camp has allowed the students to bond with each other over time.

As for the programme, I quite like the idea of getting the students to take ownership of the planning. It allows them to practice their critical

thinking...Specifically for the camp, the way the students respond to the outdoor environment is very encouraging, given the fact that they have to brave through unfamiliar surroundings and also the weather. I would say they were very supportive and encouraging towards one another, given this platform. Based on the response from the form teacher, she did mention that it's the side of them that she never get to see in class and something that is positive which she saw.

The teacher-collaborators realised that the place-responsive journey is conducive for the students to spend more time to interact and bond with each other. They and the form teachers accompanying the students also found that the deliberate slowing of pace and more time allotted to enact the place-responsive activities provided them with more interaction opportunities with the students.

Another beneficial outcome from accompanying the students was the additional time and opportunity to interact and bond with the students. For instance, Ray spoke about learning more about his students through the interaction with them during the walk where they were more forthcoming in sharing their thoughts. Likewise, Yan relished the opportunity to know her form class students outside the classroom. She felt that the place-responsive journey was a good platform for her and the other form teachers to get to know the class better, especially with those students who have been quiet in class.

D. Changing Knowledge(s), Beliefs and Practices

Hargreaves (1994) and Fullan (2001) point out that for curriculum change to benefit students, it will not only need to include what will be taught but must also impact on the teachers' beliefs and practices as well. In this section I will highlight the findings gathered from the six teacher-collaborators involved in this research project: Hwei; Yan; Wai; Ray; Peng; and Keng. These teacher-collaborators participated in the initial individual interviews and focus group discussions and the subsequent professional development session on place-responsive pedagogy. The purpose was to find out if there were any changes in their knowledge, beliefs and practices of outdoor education following their adoption of the place-responsive

approach.

Except for Ray, all the six teacher-collaborators asserted that their beliefs about outdoor education have changed following the adoption of the place-responsive pedagogy. As detailed previously (see Chapter Six), Ray had already subscribed to a place-based approach and had been adopting it in his previous job as an officer with the National Parks before its implementation in the school. As the following four extracts show, there has been a shift in their beliefs of outdoor education by the other five teacher-collaborators.

I think it's shown me another dimension to outdoor education. You know whenever people think of outdoor education; you think of someone who needs a very specialised skill set, someone who has the knowledge to survive in the wild, or someone who needs the technical expertise to set up a rope course and all that.

(Hwei, Individual Interview, April 2013)

I have similar thinking that the place-based camp programme has really give everybody an opportunity in outdoor education and broaden the aspect of outdoor education. It does not confine to things that are only very adventurous.

(Yan, Individual Interview, April 2013)

Honestly, in the past my take of the outdoors is to sweat it out; you have to really feel the elements of the outdoors and be put through the elements to survive it before you are considered as having been through the outdoors...My take now of the outdoors is not so much about having to deal with hardships and surviving the elements.

(Wai, Individual Interview, April 2013)

It has changed my belief...So it made me a little bit more aware that there is actually such a thing as you are responding to a place. I guess in future when we do bring students out...where outdoor education is concerned, there is going to be another dimension to it rather than to

just go there and do all the hard skills like how to cook, how to set up the tent, et cetera.

(Peng, Individual Interview, April 2013)

The comments by Hwei, Yan, Wai, and Peng suggest a change in their perception of outdoor education. The initial views of the four teacher-collaborators reflected the view of outdoor education as a pursuit or activity-based enterprise with a strong skills focus. This view marginalises other potential learning in outdoor education experiences such as the cultural, environmental and social aspects. The adoption of the place-responsive approach has broadened their perception on the scope of outdoor education. They realised that outdoor education could be more than learning pursuit activity skills and there are other potential aspects such as learning in, through and about a place. For Hwei, the adoption of the place-responsive approach has led to a fundamental shift in her knowledge and beliefs of what and who constitute an outdoor educator.

I think it is one of the pedagogy but it is also one that is something that anyone can do. We need not really have OE Specialists. So it is like everyone can be an outdoor teacher because in terms of places and telling the stories and all, I mean like the teacher who was with me is NPCC (National Police Cadets Corps) trained. She had all the stories with her. I think it just helped me see that outdoor (education) can be done by anyone.

(Hwei, Individual Interview, April 2013)

She believed in the usefulness of the place-responsive approach where it can be practiced by any educator with a keen interest in place and a will to impart it. Following the adoption of this approach, her image of the outdoor educator as mainly an outdoor pursuit skills specialist has changed. She realised that there are other forms of outdoor learning besides the acquisition of pursuits-based activity skills and personal development outcomes. Similarly, for Yan, the adoption of the place-responsive approach has further broadened her initial perception of outdoor education as comprising mainly pursuit-based activities such as trekking or rock wall climbing. She claimed that learning to be place-responsive through outdoor

learning is easily achievable even as she acknowledged that a lot of thoughts and efforts need to be put in by the educator. As for Wai, he also discovered that the value of outdoor education need not be confined to the learning of activity skills only. He believed that it could also include other aspects like getting to know an estate or a country better. He realised that his outdoor education practice need not be confined to only the jungle or wilderness but also in urban places. He saw the potential of adopting place-responsive outdoor learning in a heavily urbanised country like Singapore as showed in his comments below.

Sometimes it could be anything to wanting to know your estate better, wanting to know your country better; and better not in terms of like “Oh our country is founded in this year” because I think we know that, but what’s happening around us...So my take of the outdoors now is that it doesn’t have to take place in the jungle, in the wild. It can take place there but it is not necessary and it is very beneficial for an urban area like Singapore to use a place-responsive pedagogy.

(Wai, Individual Interview, April 2013)

In the case of Peng, the change in her beliefs of outdoor education came with the realisation that one can learn from responding to a place.

It has changed my belief because ever since the sharing we had last year it made me realise that there are some places that matter to me as well...And when I think back of why are these places close to my heart, it goes back to the experiences and the stories you talked about the places. Now that, being an adult, you see the value in such an education. It’s not so much about personal experiences. It’s about the knowledge of the place that made you value your experiences a little bit more. That your experiences are not based on just feelings: “I am scared! I am happy!” The experiences are really based on a place. So it made me a little bit more aware that there is actually such a thing as you are responding to a place.

(Peng, Individual Interview, April 2013)

The adoption of the place-responsive approach has made her more conscious of the potential of learning ‘about’ and ‘from’ the place.

One thing that was different for me when I was leading on this particular expedition compared to the normal one was we ended up being at the place and more conscious of what is it about the place rather than: “Okay, we are here. What time is it now? How long we should walk. Where is our next check point?” So while all these are important; we look at the programme; we look at the welfare of the students, but there is this consciousness of “Hey, while we are resting what is the place about? How did it come about? Are there any significance to this particular history of this part of Singapore?” There is a bit of consciousness.

(Peng, Individual Interview, April 2013)

Here, a shift in Peng’s knowledge, belief and practice in outdoor education can be seen. Her focus had shifted not only in regards to the personal development of the students but also to the aspects of place-based learning. For Keng, though she was introduced to the place-responsive approach during the professional development session the year before the camp, she was not initially convinced of the pedagogy, as indicated in her comment during the post-camp interview.

Actually I was first introduced to place responsive (approach) last year but I didn’t buy in to the concept. After going through the camp, it did change. I can see what can be done to enhance it...to be more prepared, to prepare the students more in this area.

(Keng, Individual Interview, April 2013)

Her reservations of the place-responsive approach also stemmed from her perceived lack of confidence and understanding of it. Whilst her belief in the potential of this approach has changed following the camp, she further reiterated that “*I do not know enough about the pedagogy to serve as an educator*” (Keng, Individual Interview, April 2013). This limited knowledge and understanding was not unexpected as she was not actively involved in the design process of the place-responsive approach.

The programme design was helmed mainly by the PE teachers in the team since some of the PE periods were utilised for the students to do the formal planning for the camp. Keng's role in the camp was to serve mainly as a teacher-facilitator for her class.

Ray presented an exceptional case as he was utilising a place-based approach in his work as a nature guide before its adoption in the camp. He believed in the value of a place-responsive approach. The greatest change for him is in giving more agency to the students to plan and execute the camp, something which he has not thought of and done before.

The biggest change for me is the approach whereby the students were taking responsibility in planning their own camp. Even in the past when you do a so-called outdoor education, it's always you are the one planning and they are the ones just carrying it out, executing it. What really changed for me is the fact that the students are the ones planning.
(Ray, Individual Interview, April 2013)

As an advocate and experienced practitioner in place-based learning, Ray saw the limitation of the one-off camp in terms of the students' level of responsiveness to the places visited. He felt that a follow-up camp or visit to the same place the following year would be useful to achieve a 'stronger' place-responsive experience. This limitation of the one-off camp was acknowledged by the other teacher-collaborators. They highlighted their plans to include the place-responsive approach in other outdoor learning programmes to further cement the students' place-responsive learning. For instance, Peng, Keng and Ray detailed their plans during the interviews to adopt the place-responsive approach in the environmental education learning field trip they are organising for the secondary two student cohort later in that year.

As can be expected, the degree of change in the knowledge, beliefs and practices of the teacher-collaborators varied individually. Here the educational change model by Fullan (2007) and the level of change model proposed by Sparkes (1990) are useful to determine any change in their knowledge, beliefs, and practices of outdoor

education. Fullan (2007) proposes that there are three phases in educational programme change: initiation, implementation and institutionalisation. In the initiation phase, any real change in the teachers' belief and practice will depend on who the initiators of the idea for change are, and the level of support for it. This implies that the teachers are most likely to be committed to change their pedagogical practice if they are the ones who initiate the change. This is borne out in the findings from the BSS case study whereby the teacher-collaborators who initiate the idea to adopt the place-responsive approach have shown more commitment to change their practices. For Fullan (2007), real implementation consists of the transformation of existing practice to some new or revised practice which potentially may involve change in materials, teaching or beliefs in order to achieve the desired students learning outcomes. The final gauge of the success of a pedagogical change is when it is institutionalised through regular practice of it by the teachers.

According to Sparkes (1990, p. 7), the teachers will evaluate any proposal for pedagogical change on a 'practicality ethic' based on the three criteria of: (a) needs congruence, (b) procedural clarity and (c) personal costs and rewards. A change in their knowledge, beliefs and practice will occur if they see a potential need to change for the students to learn (needs congruence); are clear of what to do (procedural clarity); and are positively influenced in terms of time, energy, new skills, sense of excitement, and feelings of competence (personal costs and rewards). In Sparkes' (1990) level of change model, any change can occur along a continuum between surface change and real change with three intermediate levels.

In the case of Keng, the change appeared to be closer to level two of Sparkes' (1990) model which suggests the use of new skills, teaching approaches, styles and strategies, that is, changes in teaching practices with attendant changes in the teaching role. There is no evidence to suggest a real change in her beliefs and values orientation of the place-responsive pedagogy. For Hwei, Yan, Wai and Peng, the change could be identified as closer to a level three change that "reflects the transformation in beliefs, values, ideologies and understanding with regard to pedagogical assumptions and themes. This can involve a major re-orientation of philosophy and self-image" (Sparkes, 1990, p. 4). These four teacher-collaborators

stated that they are now more conscious of utilising a more place-responsive approach in their outdoor education practice. The change in their beliefs and practice seemed to be enduring as they have detailed plans to include elements of a place-responsive approach in their lessons. They realised that being a place-responsive educator is an on-going learning process and believed that they are better prepared to take on this role after their maiden attempt during the camp. This is aptly reflected by Hwei:

I wouldn't say that now I am an expert but I do feel a little bit more prepared when we are talking about place-responsive. I feel that being place-responsive; it is like your learning is on-going because when you visit a different place, then the set of contents and knowledge that you need to have changes. So, I do feel that I could take on the role anytime. (Hwei, Individual Interview, April 2013)

Even within the same level three of Sparkes' (1990) model, the degree of change can vary considerably between the four teacher-collaborators. A particular case in point is Wai, a beginning teacher and outdoor educator. His beliefs, values and philosophical orientation of outdoor education appeared to have changed considerably with the adoption of the place-responsive approach in his practice as suggested in his narrative below.

I would say that I will buy more to the outdoors. Previously I was exposed to the outdoors...but I didn't really quite enjoy it... I would trek but I will not look upwards, enjoy the scenery...But now it is like, I will actually look for certain sites... Just the other day, I designed my run such that I reach somewhere or see something that is of significance to our country at least...Just the other day I went to Bukit Batok Nature Reserve again; the last time we only walked up to the steps. So this time I walked up to the steps and I saw there was a trail there, a long road going in... I went there because I heard there were a lot of murders there. So I wanted to go to take a look at why murders will occur there. And I saw that the road was very long. It was very secluded with only six houses there. So I can understand. It doesn't really have to be National

Heritage. Even things like suspected serial murders and serial killers here. Just basically things that I wouldn't be bothered in the past.

(Wai, Individual Interview, April 2013)

Like my Dad told me: "Oh, I fetched this client. He wanted to go and take a look at his aquarium. It turned out that the Singapore Land Authority (SLA) is going to take back the land for his aquarium." So this guy has to re-locate to Malaysia JB for his huge fish aquarium and he has to plant back the grass and all that. So I went there to take a look again because I used to help out in Pasir Ris Farmway as a volunteer for this dog shelter... So I hear things like unhappiness about the people in the location; how livelihood is threatened; how they have to relocate; how they are forced to relocate. It just brings me to the place.

(Wai, Individual Interview, April 2013)

Here, Wai displayed an authentic change in his beliefs and value orientation in his outdoor education practice. Besides the camp, he made several attempts to include elements of place-responsiveness in his regular practice. He revealed an increased interest to know more about some places and the issues surrounding them. Applying Giddens' structuration theory (1984), Wai has attained a level of practical consciousness (non-conscious knowledge) where an actor knows what to do to produce and reproduce actions in a variety of contexts and to rationalise what is done. It has, in turn, led to the establishment of useful day-to-day routines resulting in the recursive social practice of incorporating a place-responsive approach. The extent of his change in beliefs and practice of outdoor education is reflected in another narrative shared by Wai below.

Apart from that, there are a lot of boy-girl relationships going on in class as well. So when we went to Fort Canning, we went to this tree where we have this; I can't remember the name but I called it 'love' seed; some people called it 'saga' seed... I said: "Okay, this seed is very special. Look at it. What's so special about it?" Then they picked it up. So I said: "Okay, the group that was supposed to share, share now." And they said: "Oh, actually this one is a representation of love in many countries. But

it is not advisable to touch it or eat it...because you know it is actually coated with something poisonous”.... “Last time my mother told me that they will go and play with the seeds and put in their nose and their ears. This is the seed.” And I said: “Yeah, actually it is... And we realised that actually whatever that they missed out on has been lost for quite a while. For example, I got to pick up those seeds up when I was a kid. I see those trees everywhere. In fact, behind Mid-Point Orchard, there was one and I shared with them: “Oh, I went to pick up the seeds there.” So when the students told me that they tried to pick up for their girlfriend or boyfriend recently, there were no seeds there. I thought it was impossible because I just went to pick them up a couple of years ago. When I went there last Saturday, I realised that it is really not there anymore. Today, I will be seeing them. I will share with them again as a follow up; to tell them really that...the tree is gone because of urbanisation; they are really chopping down (the trees) a fair bit. I won't be surprised if the tree is really old because I saw a date on one of the houses there; I think 1928. The house has been there for so long. The tree must have been there for quite a while; it is quite a big tree and it is gone now. So it is just really for them to think about.

(Wai, Individual Interview, April 2013)

Here Wai narrated his attempt to use the class visit during the camp to a local park (Fort Canning) and sharing the story of the ‘love’ seeds (shaped in the form of a love symbol) of a local species of tree to discuss issues of urbanisation and its effect on the environment, people, and place. His belief in the value of a place-responsive approach could also be seen in his subsequent attempt to include it in one of his physical education lessons for the same class. As could be derived, there were clear signs of an enduring change in his philosophical values and practices of outdoor education to include a more place-responsive approach.

Summary of Findings from BSS Case Study

In analysing the data collected from the BSS case study, three themes emerged in response to research question two. The themes that arise from the introduction of the place-responsive journey format during the camp are: development of student agency, enhanced teacher agency, and the fostering of teacher to student and student to student relationships. The findings in research question three were also presented. These findings included a change in their knowledge, beliefs and practices of outdoor education following the adoption of the place-responsive project. It has broadened their knowledge and changed their initial belief and practice of outdoor education. Their perception of outdoor education as mainly for outdoor pursuit skills, personal development and values education has changed. They saw the potential of a place-responsive pedagogy in education ‘from’, ‘about’ and ‘for’ places and their community.

The BSS team viewed the adoption of the place-responsive approach in the secondary three cohort camp as a success despite their initial anxiety about the design and implementation process. They welcomed the opportunity provided in a place-responsive approach in giving the students more agency to self-direct their learning through their own planning and delivery of the camp. The place-responsive approach also resulted in more active involvement of the teachers and enhanced their control (agency) over how the camp could be run compared to a service-provider led camp. This resulted in closer relationships between the teacher-collaborators and their students and amongst the students themselves.

Case Study 2: Place-Responsive Outdoor Education Pedagogy in CSS

For CSS, the planning to incorporate a place-responsive approach in the outdoor education programme took place after the one-day professional development workshop held in November 2012. The CSS teacher-collaborators decided to pilot a place-responsive approach in the school flagship Education For Life (EFL) programme for the secondary two student cohort in 2013. This is an experiential learning programme that integrates learning from curricular (academic subjects)

and co-curricular (outdoor adventure education) components. It aimed to integrate real world learning in the form of an overseas adventure-based camp into curriculum subjects such as science, humanities, aesthetics, mathematics, information and communication technology, language and arts.

As described in the camp booklet given to the students, the objectives of the camp were:

- To develop self-directed inquiry and life-long learning skills in students;
- To develop relationship management skills in students through handling challenging situations effectively as a team;
- To provide students with the opportunity to explore the world beyond the classroom so as to help them make connections between theory and reality; and
- To develop 21st Century Skills and engage students in real world problem solving through Project Work

Three competency skills of problem solving, research, and communication are taught explicitly in the EFL programme. The EFL for the Secondary Two cohort has two components: a project work segment lasting two semesters and an overseas adventure camp spanning four days.

Project work segment – scenario and tasks assigned

The project work comprised a research project that required the student groups to research and present a proposal on developing Kota Tinggi Rainforest Camp Resort in West Malaysia as a tourist destination. As stated in the EFL camp booklet, the scenario given to the students was that the Malaysian Government is planning to develop Kota Tinggi and has set up a committee to draw up the developmental plans. This committee decided to work on the development of the site of the present Kota Tinggi Rainforest Resort and called for a Request For Proposal (RFP) with the following requirements:

1. To create a new lifestyle attraction for both locals and tourists through

recreational activities and facilities;

2. To demonstrate environmental sensitivity in the proposal by suggesting measures to preserve and protect the natural habitats and ecosystem; and
3. To improve the standard of living of the residents in Kota Tinggi.

The students were grouped into project teams. Each team was ‘invited’ to respond to the committee request with a sound proposal and presentation that would meet the requirements of the ‘Malaysian Government’. The tasks for the team were to submit a report in the form of presentation slides in response to the RFP which included:

- i. the scenario given
- ii. research done on relevant aspects of Kota Tinggi
- iii. a detailed proposal and developmental plan for the new lifestyle attraction for the locals and tourists
- iv. possible challenges that you will face in the proposal
- v. a selected underlying challenge and the possible solution ideas
- vi. the suggested environmental protection measures to preserve, protect or even improve the wildlife habitat, flora and fauna in the site

The team was then invited to a ‘site-survey’ from 13 to 16 March 2013 at the Kota Tinggi Rainforest Resort which coincided with the four-day camp. During the ‘site survey’, the students had to:

- i. make connections with the site by using their five senses,
- ii. identify the different types of environmental and wildlife habitats, flora and fauna found in the site,
- iii. conduct a survey with the locals and tourists at the Resort, the Malay village and any other parts of Kota Tinggi on their preferred recreational activities and facilities. The finalised proposal in Task 3 should take into consideration the results of their survey.

Following the four-day camp (site visit), the project teams worked on refining their proposal for the development of the Kota Tinggi Rainforest Resort. This culminated in a presentation to the class followed by the submission of the final report in the second semester. This real-world problem-solving component is aligned to what Smith (2002) has described as one of five thematic patterns that constitute the type of place-based learning that schools are involved in. Smith (2002) suggests that the students' experiences in the real world allow them to connect their learning to their own lives, communities and the regions.

Kota Tinggi Rainforest Resort - Campsite

The Kota Tinggi Rainforest Camp Resort promoted itself as an adventure getaway destination complete with amenities such as modern chalets, a multi-purpose hall, seminar rooms and an in-house restaurant. It also housed an adventure centre and campsite with basic amenities on a separate wing. The adventure centre campsite has a custom-built challenge rope course, a zipline, climbing and abseiling tower and a man-made pond of 300 metres in diameter for water activities. The campsite has adequate space for mass camping using tents that could easily accommodate CSS cohort of 200 secondary two student campers.

The programme for the four-day residential camp which coincided with the 'site visit' for the project work segment is described below:

- Day 1** Set off from school to Kota Tinggi in the morning. Check in to campsite on arrival followed by adventure-based team building activities
- Day 2 & 3** Bicultural exchange visit to a neighboring village/Kayaking along the Sungei Johor River/Adventure-based team building activities
- Day 4** Journey back to school.

Whilst getting the students to be place-responsive was not explicitly stated in the camp objectives listed in the camp booklet, various assignments and activities were included in the programme to enable this aim. For their project work, the student groups had to do research on the camp site and the community and cultures of the

people prior to their visit. This research work continued during the camp as an avenue for them to verify and amend their initial findings. During the four-day camp at the Kota Tinggi Rainforest Camp Resort held in March 2013, the student groups had to perform a series of place-responsive assignments to get them to be responsive to the place and to enable them to craft their final proposal for the project. These place-responsive assignments included:

- Observing and recording the landscapes, people and environment along the bus journey to Kota Tinggi from Singapore,
- Creating a sketch of the campsite and surrounding on arrival at the Kota Rainforest Camp,
- Interacting and interviewing the local villagers in a nearby village,
- Observing the livelihood of the local community along the Sungei Johor River while kayaking,
- Learning the cultural heritage of the local community through cooking and sharing a meal together.

The design and implementation of the project work segment were helmed by Huat and Yun whilst Choo and Dan were in-charge of organising the adventure education activities segment through the selected service provider. Prior to the camp, the CSS teacher-collaborators did a reconnaissance of the proposed camp and project work sites in Kota Tinggi, Malaysia to learn more about these places and what they could offer to the students' learning. The four sign-posts proposed by Wattchow and Brown (2011) were used as a guide in their reconnoitre and subsequent design and implementation of the project work and camp.

Perspectives of Teacher-Collaborators in the Design and Implementation of the Place-Responsive Programme

In this section, I highlight the perspectives of the four CSS teacher collaborators in the EFL programme for the secondary two student cohort. The adoption of this approach involved both the project work segment helmed by Huat and Yun and the adventure camp segment helmed by Choo and Dan.

Place-responsive approach is aligned with the desired student learning outcomes

According to the teacher-collaborators, the EFL camp programme has previously been heavily filled with subject-based content. For example, past EFL projects included getting the students to measure the acidity of the soil around their campsite, estimating the length of a suspension bridge in Kota Tinggi, and constructing a model of the bridge after the trip. However, as reflected by the teacher-collaborators, these project works were not centred on learning from and about the place itself. Thus, these projects could have been completed in any location.

That was one of the things that were brought up during our EFL briefing for all our six programmes. It was highlighted that at Sec Two level, when we talk about the students as globalised citizens, how much of it did we fulfill? Are we just going there to use the place or are we going there to teach the students to know more about the venue, about where we are going?

We also want the girls to know more about place so that they can be globalised citizens. Not just go there and just cook a little bit, do the book-mark, walk the bridge.

(Choo, Individual Interview, April 2013)

Here, Choo shared her reservations on whether the learning outcomes of developing the students to learn and identify global issues were met in previous overseas EFL programmes. Like other teacher-collaborators, she recognised the potential value of including a place-responsive approach in helping the students to be more globally aware. The CSS teacher-collaborators believed that incorporating some aspects of place-responsive learning is aligned to what the school is trying to achieve in the EFL overseas project work with an adventure camp.

Adoption of the four sign posts of place –responsive learning

The CSS team found the four sign-posts for a place-responsive pedagogy (Wattchow & Brown, 2011) to be a useful framework in designing the EFL programme. Huat and Yun shared that aspects of the four sign posts were

incorporated in the design of the project work segment as reflected in their crafting of the scenario for the promotion of tourism, task assignments, presentation and report format for the project work. Similarly, Choo and Dan attempted to incorporate aspects of place-responsiveness in the students during the stay at the campsite, bicultural exchange programme with the villagers and kayaking along the Sungei Johor River. Additionally, as the coordinator organising the adventure programme segment, Dan also shared that he found the following questions suggested by Wendell Berry (1987) below as a useful tool during the reconnaissance in promoting a greater awareness of the place they are visiting.

- What is here?
- What will the place permits us to do here?
- What will the place helps us to do here?

Dan used these questions as well as the four sign-posts to guide his design of the adventure education component for the camp when working with the appointed vendor on the programme. He quoted an example of how he got the vendor to change the previous programme delivered in 2012 to incorporate a more place-responsive approach in the camp for 2013 below.

We fedback to the vendor that we want to have more time in particular areas we are visiting instead of 'touch and go'. So when we reach the new place, we want the students to spend more time with the place and also to know more of the cultural differences between the students and the villagers as well. So there will be like one whole day of cultural exchange. Every single class must be able to do a cultural exchange programme at the end of the 4-day 3-night camp. Over at the campsite, we also placed more emphasis on the environment like teaching them about the physical environment. For examples: the trees, the hills and mountains there. I mean just the basic introduction of the environment and where this campsite is built on, where is it on the map, stuff like that so as to make the girls know where they are and to know more of the place. That is what we are trying to do.

(Dan, Individual Interview, April 2013)

Here Dan shared that he used the questions suggested by Wendell Berry (1987) when working with the vendor to change the programme to focus more on the learning about and from the place they were visiting. There was a conscious effort on his part to increase the interaction time between the students and villagers through a whole day programme instead of a two-hour segment employed in the previous year. This enabled the students to have more time to immerse in their experience of place utilising a series of activities such as interviewing, cooking a joint meal and playing games with the villagers.

Emerging Themes

In this section, I highlight the emerging themes arising from the findings and analysis of the data gathered from the four teacher-collaborators involved in this research project initially: Choo, Dan, Huat and Yun. These four teacher-collaborators had participated in the initial individual interview and focus group discussion and the subsequent professional development session prior to its adoption. As such, the purpose here is to find any change in their knowledge, beliefs and practices of outdoor education following their adoption of the place-responsive approach.

A. Creating authenticity in the project work design for students

Huat and Yun, who oversaw the project work segment of the camp, believed that the motivation and engagement levels of the students had increased with the introduction of the place-responsive aspects of the project. They attributed the adoption of the approach to making the project work more authentic through greater interaction of the students with the local people and their place. This in turn resulted in the increased motivation and engagement of the students.

But now it's like we are asking them to look at the Kota Tinggi Rainforest Camp resort, look at the place itself; what are the improvements that you will make to the place so as to improve the benefits to the locals there as well as to attract the tourists in that sense.

So the impetus is that when you go to the place, you must really see what is the value of the place; what are the things that are good about the place; what are the things you think can be improved. And you also find more motivation when you interview the people there. You really find out from the people who have been staying there on what are the things that are good, what are the things they like about it (place), what are the things that are not so good, that are lacking and so on. So the students are supposed to research on Kota Tinggi, research into the campsite and then after that they are supposed to come up with the survey questions to find out the locals' responses to their proposal. Then after that, from the survey finding, whether it supported the proposal or not. If it supports, why? If it did not support, what would you change in your proposal?

(Huat, Individual Interview, April 2013)

Here Huat expressed his view that the previous project work in Kota Tinggi was neither focussed on the place nor people but on specific tasks such as how to promote tourism through highlighting a local suspension bridge as an attraction. He believed that including the aspects of learning more of the place and people through getting the students to immerse themselves with the villagers living around the campsite had helped motivate the students to put in greater efforts for the project. The students benefitted from interacting with the community living around their campsite through various activities such as interviewing the villagers and learning local cuisines during their joint cooking lessons. Huat believed that through such activities, the students developed a keener sense of observation. The focus on people, community and place also motivated the students to treat the project authentically.

Yun and Huat, who oversaw the project work presentations by the student groups during the project work lessons in class, also observed that the students had gained more knowledge and understanding of the place and people in the community they visited after the camp. The students were more aware of the pertinent issues affecting the villagers there and some were able to come up with ideas to resolve the issues as described by Huat below.

I have heard a few group presentations. It's good in the sense that some of them found out that the locals like it there (Kota Tinggi), but they don't like the tourists there. They said that they dirtied the place; they said that some of the tourists there are not very hygienic... Some of the students found out that they don't have any internet access there... They thought it is some 'ulu ulu' (remote) place. The littering part; they suggested that maybe the villagers can get more litter bins because they realised that it is actually very difficult to find the rubbish bins down there. (Huat, Individual Interview, April 2013)

Here Huat shared an example of how the process in adopting the place-responsive approach has enabled the teacher-collaborators to consider what the place and inhabitants could provide for the learning of their students. The four sign-posts of a place-responsive approach were used to re-design the student experience of the village to make it more authentic. Through the time spent in interacting, cooking a local meal together and interviewing the villagers, the students found out about the local issues. For instance, the students learned of the issue of littering in the village and subsequently attempted to provide solutions to it through their project work.

B. Opportunities to learn from the place, people and their lifestyles

By incorporating the place-responsive approach in the camp programme, the teacher-collaborators felt that it provided opportunities for the students to immerse themselves more in the experience of the place and its community. This enabled the students to learn from the place and the inhabitants, as shared by Dan below.

It turned out really well. This time it was really good. I mean that they have really known more about the place; definitely know much more about the place and they are much more appreciative. And to see them interacting with the villagers is really a good thing. They (villagers) are very friendly towards their neighbours; and they open their doors to anybody who want to come in especially the exchange session. So these are the things I think the girls really learned so much more. No doubt this EFL Sec Twos camp is still an adventure-based camp but we actually incorporated the elements of more interaction with the

environment and people. Which I think it really helps; I mean it created much more memories for them and they really remembered the place much better.

(Dan, Individual Interview, April 2013)

Here Dan commented that the introduction of place-responsive learning in the adventure-based component of the camp broadened the students' learning. He shared that changing the programme to cater for a full day of cultural immersion in the village had provided the students with more time to interact and learn from the villagers. The students learnt more of the place, culture and the lifestyles of the villagers through spending time in engaging in conversations, playing games, joint cooking lesson and local craft making.

Another infusion of the place-responsive approach in the adventure-based activity of the camp was the introduction of kayaking in the Sungei Johor river.

So this year we actually had kayaking and this time round they really get to kayak in a native river in Malaysia – the Johor River. They actually get to see more things that they don't see most of the time in the Singapore river. To me, yes, anybody can kayak in Singapore but to be able to kayak in a place that is isolated and with not too many people; and they see all the native fishermen actually doing their work and everything, they realised the importance of the river in their livelihood. They appreciated even more when they saw some of the things like they wash clothes there; they wash all their stuff there; they fish there for their food; they even transport food using the river. So it is something that the girls don't experience in Singapore. So I think the kayaking part is really a lot on learning about the people and environment compared to the other programme, if not a lot more. It is a huge part where I feel is even more important because when they kayak, they really enjoy. Along the way, I was kayaking with one girl. So I keep telling them: "Come on, enjoy the environment! What do you see?" So these are the questions that the teachers will ask them at the end of the day which is in the booklet...So they would have asked: "What do you feel about these people living and looking at you at the side? What do you think

those people on the road are doing? ...And the students observed and asked; “why does this guy have so many sticks?”; “What are they doing?”; “Oh, shrimps fishing! They are actually fishing for prawns!” These are the things that they are amazed about. Which I think is really a good aspect.

(Dan, Individual Interview, April 2013)

Here Dan spoke about the attempts to infuse place-responsiveness in the students by combining an adventure activity with place-based learning. In applying the signposts of a place-responsive approach, the learning opportunities provided by the place were maximized. Dan noted that through kayaking down part of the Sungei Johor river, the students were able to see its significance to the identity of the place, people and their lifestyles. The kayaking as an activity served as a means for the students to learn from and about the place and its inhabitants other than merely doing the adventure activity itself.

C. Relationship-Building

Besides the opportunities provided to develop a sense of place and learn from the place, the journeys undertaken by the students also contributed in the personal and social development for both the students and teachers. Yun spoke of the resilience of the students in overcoming challenges during the journeys. The students realised the importance of working together to accomplish a set task.

The girls have actually learned resilience and they have learned to work closely together as a team...When we go out, it was hot but they persevere; they went on. So to me, resilience is one. So they have shown that they are quite resilient...And the importance of teamwork, I think the girls have also come to realise that. And of course, I feel also that it has brought the teacher and the students closer because we see them in a different light and in a totally different place rather than just in the classroom.

(Yun, Individual Interview, April 2013)

Yun also shared that the teachers on the trip observed a different side of the students outside the classroom setting. She valued the opportunity created for the teachers to establish closer bond with her students. This is supported by Choo below who felt that even the students not in her form class were more responsive to her after the camp.

After the camp, I think the teachers and the students are more bonded. Their relationships seem to be better. I mean I don't teach most of the Sec Twos lot but I can tell that they are more responsive to me. My relationships with them, even though not as impactful as the Form teachers because I was moving around during the camp, but there is also a change in the sense that they know where I stand and they know that the teachers care for them.

(Choo, Individual Interview, April 2013)

D. Changing Knowledge(s), Beliefs and Practices

In this section, I highlight the changes in the teacher-collaborators' knowledge, beliefs and practices of outdoor education following their adoption of the place-responsive approach. Besides the application of structuration theory, I used Sparkes' (1990) level of change model and Fullan's (2007) change process to analyse the findings.

As explained earlier in Chapter Four, if a social institution such as a school has no existence apart from the human actions that constitute and re-constitute it, then the school like a society is not an oppressive entity that must be overcome, but a social construction that can be shaped through the actions of the agents such as teachers, students, administrators and stakeholders. In this respect, the collective agency of the teacher-collaborators can shape how outdoor education could be practiced in CSS. According to Priestley et al. (2012), the extent to which the teacher-collaborators are able to achieve agency will vary from context to context based upon certain environmental conditions of possibilities and constraints. An important factor to achieve agency lies in the beliefs, values and attributes of the teacher-collaborators to mobilise their available resources. Thus, for any real

change in the practice towards a place-responsive outdoor education in CSS to occur, the teacher-collaborators need to believe in its value and use their power and resources available to effect the change.

The collective agency of the teacher-collaborators can influence the structure of the outdoor education programme. In the case of CSS, the teacher-collaborators have used their collective agency and the rules and resources available to positively influence the change in outdoor education practice in the school. This change in the school's practice towards a more place-responsive outdoor education programme has in turn impacted positively upon the knowledge, beliefs and values of the teacher-collaborators. However, the degree of the change in knowledge, beliefs and practice in outdoor education of the individual teacher-collaborator is varied.

In the case of Choo, the CSS team leader, she claimed that there is little change in her knowledge and beliefs of outdoor education as described below.

I think outdoor education still has its three aims and as long as we are conscious of these three aims, for example we have adventure, we have experiential, and we have environmental learning. It is not just adventure, adventure, adventure...So I think the place-responsive approach is under the experiential but we can incorporate it into anything, like we can incorporate into CIP (Community Involvement Programme), we can incorporate it into adventure-based programme. That the activity is not so much important because I think the purpose in our school itself is for the students to know more about wherever they are going, to know more of the culture, to know more about other peoples and the problems they faced, to know more about the land, or to know more of just everything. I think for me it is not so much of a difference because when people talk about outdoor education, people immediately think of rock wall and kayaking. But I already have the understanding that it is not just that.

(Choo, Individual Interview, April 2013)

For Choo, she has already known that outdoor education is more than doing adventure activities. She attributed this to her knowledge and experience gained in her participation in an overseas programme at the Outdoor Pursuits Centre in New Zealand where other aspects of outdoor education such as environmental education were included. In terms of the place-responsive approach in outdoor education, she believed it is aligned to the desired learning outcomes that the school has set for the students. As a Head of Department in charge of the secondary two EFL programme she has relatively more power, rules and resources at her disposal to effect a change in the outdoor education curriculum. She exerted her agency by trying to influence her colleagues to change the design of their outdoor education programme as described below.

Actually I brought in the teachers last week and we went through the place-responsive pedagogy. Since Mano, Swee Yeow, Kim Tian, Jonathan, Kai Sin, Dona, and Joo Yin are all in the Overseas Community Involvement Programme for Secondary Three student cohort, before they go out for their trip they can also see how they can use these four signposts and how they can tweak the programme... They have been doing this but how can they do it better and make it more place-responsive. So we had a three-hour session with them last week.
(Choo, Focus Group Discussion, May 2013)

Here Choo demonstrated her belief in the potential of a place-responsive pedagogy through sharing it with her colleagues who are designing other experiential learning programmes for students at other levels. However, she felt that the focus of the outdoor education programmes in CSS is still predominantly in adventure-based activities despite the attempt to incorporate a more place-responsive approach. She also shared that her challenge is in finding sufficient time amidst her busy schedule to design a more place-responsive approach in her outdoor education practice beyond the secondary two EFL camp. Applying Sparkes' (1990) level of change model in the case of Choo, the change in her knowledge beliefs, and practice in outdoor education is closer towards a level two which suggests the use of new skills, teaching approaches, styles and strategies, that is, changes in teaching practices with attendant changes in the teaching role.

In the case of Dan, Yun and Huat, their knowledge, beliefs, and practices in outdoor education were transformed by the place-responsive project.

For me, I will be the opposite of Choo. All along I thought that outdoor education is just doing rock climbing, kayaking, all the outdoor activities...For example when I am in ODAC (Outdoor Activities Club) during Junior College, the places I have been during ODAC days I can't remember...That is what I was being taught when I was in ODAC...We went to a lot of different places. For example when we went trekking, all of us were just looking at the ground because we were very tired. So it's one step at a time and we do not get to experience things like where we did, which area are we in and stuff like that. Only when I read more about place-responsiveness and interaction with the environment and stuff like that that it brings me to a different light.

(Dan, Focus Group Discussion, May 2013)

Mine is very similar to Dan. Outdoors to me is basically adventure. I think when you are more aware of the place when you are doing the things then it becomes more meaningful.

(Yun, Focus Group Discussion, May 2013)

Because initially I think it is different for me. When I heard that the Sec Twos EFL students are going to Kota Tinggi, the impression is "okay, it's just another place". So what are the activities we are going to have? Okay, outdoors: we are going to do this, do this.

(Huat, Individual Interview, April 2013)

For Dan, Yun, and Huat their past experiences in the outdoors caused them to equate outdoor education to adventure activities. Their prior knowledge and beliefs of outdoor education were that it is mainly to create physical and mental challenging situations to toughen the individuals. The adoption of the place-responsive approach has enabled them to see outdoor education in a different light.

I realised that all along what we have been doing is just doing adventure camp for the sake of adventure. There is no underlying meaning. There is no interaction with the environment...That is when I realised the importance of having a sense of respect for the culture, and with the place and the interaction with the place as well. And how we can actually ask “what can the place do for us?” instead of: “what we can do at the place?” So this is something that I don’t really agree with on what we’re doing last year. So I believed that this year we definitely have a better programme than last year...Besides having a normal adventure camp; which anybody can organise an adventure camp - if you want to do rock climbing; I mean you can do it in Singapore; but what is the unique thing that can be offered overseas? So what can that place do for us? So things like interaction with the environment and more information of the place; that is more important.

(Dan, Individual Interview, April 2013)

Here Dan shared that he gained new insights after reading more on the place-responsive approach. He realised that the practice of outdoor education in CSS as well as his own practice previously have been focussed predominantly on adventure pursuits. He found the potential of using the place-responsive approach to create authentic learning for the students. He realised that the adventure-based activity such as the kayaking journey down the Sungei Johor could serve as a means and not as an end in itself for the students to learn more from the place, inhabitants and environment.

For Dan, Yun and Huat, learning about and adopting the place-responsive approach had impacted positively on their knowledge, beliefs and practices of outdoor education. Dan implied that the mere focus on doing an outdoor activity previously had resulted in him not being conscious of the place and people. Dan, Yun, and Huat now realised that outdoor education could be more than doing outdoor activities. They believed that the EFL project work cum adventure camp programme they conducted were more place-responsive as a result of the changes in their knowledge, beliefs and practices of outdoor education. The teacher-collaborators acknowledged that prior to their adoption of a place-responsive

approach, the focus of their practice in outdoor education was on the activity that could be done in a place. The implementation of a place-responsive approach had enabled them to be more conscious of a place and what it could offer in terms of learning for the students. This is illustrated by Huat:

So the issue is that we are now more aware and conscious of how to tap on the place itself really to suit the learning that we are going to design for the students.

(Huat, Individual Interview, April 2013)

The teacher-collaborators also realised that to be a place-responsive outdoor educator required them to know and immerse themselves in the place of learning. Both Huat and Yun found that unlike previous years where they could implement the project work segment in Kota Tinggi fairly successfully without the need to visit the place, the adoption of the place-responsive approach necessitated the entire team to change their practice through making a visit to the site. Whilst this required more work on the part of the teachers, they saw the potential learning benefits for the students as expressed by Huat below.

I think the change would be in terms of the motivation to do it because I think for the kids it will make sense. It would be better if you can tie in with the place. But it's a lot of hassles to do it. You need to do a lot of planning; you need to do a lot of recess and so on. But after having gone through such an experience when you see the students benefited from the process, then it will provide more motivation for you to do it the second time round. The second thing is that if you have been through it; you experienced it for yourself, you know how to do it better.

(Huat, Focus Group Discussion, May 2013)

The teacher-collaborators saw the potential of a place-responsive learning for developing in the students a sense of respect for cultures, people and community. However, whilst they were satisfied with the students' learning outcomes from the inaugural adoption of the place-responsive programme in the secondary two EFL project work cum adventure camp, they also recognised the need to learn more of

this approach. They expressed their limited knowledge and understanding in this approach and recognised the need to practise more in this aspect. They shared their plan to incorporate it in the other EFL programmes in the school. This represents an important phase toward the institutionisation of the practice of place-responsive outdoor education, according to Fullan's (2007) change process. Fullan (2007) suggests that the continuation/institutionised phase of the change process is a critical phase as it can lead to its embodiment in regular operation or its discontinuation. Whether the change will be institutionised will depend on the influence of funding, administrators, institutional systems, community, teachers, and politics involved. The positive influence of the school structure and agency exerted by the teacher-collaborators, hence, support the institutionisation of the continued practice of a place-responsive outdoor education in CSS.

Summary of Findings from the CSS Case Study

For the CSS case study, three themes emerged. The three themes arising from the adoption of the place-responsive camp are: (1) creating authenticity in the project work segment to enhance students learning, (2) opportunities provided in a place-responsive learning, and (3) building resilience and relationships between students and teachers in the EFL programme for the secondary two student cohort. The CSS team viewed the adoption of the place-responsive approach in the secondary two EFL project work cum adventure camp overseas in Kota Tinggi, Malaysia, as fairly successful. The teacher-collaborators believed that the place-responsive approach adopted had impacted positively on their knowledge, beliefs and practice of outdoor education. They saw the benefits of a place-responsive approach in developing the global awareness of students on cross-cultural, community and place issues. However, the depth of change in the knowledge, beliefs and practice in outdoor education of the CSS teacher-collaborators varied amongst the individuals. In the case of Choo, the change in her practice of a place responsive outdoor education was not transformative. For Dan, Huat and Yun, there appeared to be a move towards a transformational change in a major re-orientation of their philosophy, beliefs and values with regard to prior pedagogical assumptions of outdoor education.

Chapter Eight: Place-Responsive Approach as an Alternative Outdoor Education Pedagogy

Introduction

This chapter concludes the presentation of the data analysis in phase two of the research project. It examines the enablers and barriers that the teacher-collaborators in the two case study schools encountered in their adoption of a place-responsive pedagogy. It also explores the viability of this approach as an alternative mode of outdoor education delivery based on the experiences of the teacher-collaborators in the case study. Specifically, this chapter addresses the final two research questions:

RQ4: What are the enablers and barriers that affected their implementation of place-responsive outdoor education?

RQ5: Does a place-responsive approach offer a viable and practical alternative to current modes of outdoor education delivery in Singapore?

I will present the findings of the two case studies to answer the research questions using Giddens' concepts of agency, structure, power and the duality of structure (see Chapter Four). I will examine the agency of the teacher-collaborators and school leaders in the two schools to create a new social structure. By social structure, I mean the practice of a place-responsive approach in outdoor education. I will also examine how the adoption of this approach has in turn influenced the agency of the teacher-collaborators in the schools.

Case Study 1: Place-Responsive Pedagogy in BSS

Enablers and barriers to the design and implementation of place-responsive outdoor education pedagogy

Schools, as institutions, have a structure in terms of the rules and resources which enable and constraint the pedagogical practice of the teachers. The teacher-collaborators identified the enablers as support from the school leaders and form

class teachers, school culture, and the team of committed and competent outdoor education teachers. Barriers encountered by the BSS team included the limited knowledge of the teacher-collaborators in: (1) designing and adopting a place-responsive approach; (2) managing the involvement of uncommitted form class teachers; (3) ineffective camp facilitators provided by an appointed service provider; and (4) inadequate allocation of time for students to immerse themselves in the place experiences.

Support and trust of school leaders

According to Giddens (1984), there are two types of resources: allocative resources, and authoritative resources. Allocative resources are physical resources that are used to control or direct patterns of social interaction. Authoritative resources are the non-material resources that relate to the capacity of the individuals to direct, influence, or organise social interaction. These two type of resources are inter-related. For example, individuals such as the principal and heads of department in the school with access to greater allocative resources may enjoy greater authority in deciding the curriculum which may in turn lead to additional allocative resources given. In the BSS case, both allocative resources and authoritative resources were utilised positively for the team of teacher-collaborators to design and implement the place-responsive camp programme. The teacher-collaborators believed that the team of supportive school leaders who have exerted their power positively over the rules and resources available for the successful design and implementation of the place-responsive programme is a strong enabler.

In terms of the authoritative resources provided, all the teacher-collaborators described the principal as a key leader who has empowered the team with the agency to carry out the change in pedagogical approach in the outdoor education programme. They considered the trust of the principal critical for the pilot place-responsive project to be successful despite it being a 'new' approach, as summed by Hwei, Bao, and Ray below.

We were very fortunate, also, to have a Senior Management who allows us to explore and give us enough trust to run the programme...That is

why we are fortunate that she (Principal) really trusts the Department.
(Hwei, Individual Interview, April 2013)

I have lots of support from the school leaders because it is really a 'new territory' for them. They have never done such a scale of activities before and there weren't a lot of questions asked. They gave me a lot of autonomy and authority to run such a programme which felt good.
(Bao, Individual Interview, April 2013)

Yeah, I think the Principal gave quite a fair bit of support and quite a fair bit of freedom as well in allowing the PE Department to conduct a camp that the students organised. A camp that involved the students walking out of the school as a class, taking public transport as a class, and all that. So I thought that is one of the very key things.
(Ray, Individual Interview, April 2013)

Here Hwei, Bao and Ray reflected the sentiment of all the teacher-collaborators that the trust of the principal and her senior management staff in the capability of the team to effect a pedagogical change is essential. This trust provided them with the reassurance and confidence to design and deliver the place-responsive camp. Bao and Ray alluded to the large scale of the camp programme which involved a total of 274 students in seven classes journeying on different routes in many parts of Singapore. He commented that it would not have been allowed to continue without the trust and support of the school leaders. The teacher-collaborator also saw the presence and active participation of the principal to journey with the students on the final day of the camp as an endorsement and support for the programme.

Besides empowering the team with the freedom to change their pedagogical practice to try out a place-responsive approach, the BSS school leaders also provided strong support in the provision of allocative resources. With the support of the school management, up to four PE periods weekly prior to the camp were allotted for the class students to plan for it. The allocative resources also included the provision of human resource to assist the team of teacher-collaborators and adequate funding to deliver the camp programme. For example, support was given

for the team to deploy the form class teachers who were given the option to accompany their students during the camp. The team were also provided funding to procure additional human resource in the form of two outdoor instructors to accompany each class from an outdoor service provider.

Right on top is the financial aspect because it's \$90 per participant. This is quite a costly amount of money and we have funding from Cluster fund... Without the funding I think it won't happen also.

(Bao, Individual Interview, April 2013)

Of particular importance in terms of the allocative resources provided for the team is the financial aspect. As summed by Bao, the camp commandant, it was challenging for the team of teacher-collaborators to implement the place-responsive camp without additional funding. This is because of the additional human resource and transportation costs needed to employ the outdoor instructors from the service provider to complement the teaching staff during the journey. Moreover, Bao felt that some students would not be able to participate in the camp without the subsidy given their low social-economic status.

School culture

The teacher-collaborators also believed that the school culture that recognised the value of outdoor education had made it easier for them to implement the place-responsive camp successfully. BSS actively encourages their students to participate in the outdoor education programmes as an integral part of the school curriculum. This resulted in the high participation rate of these programmes by the majority of students which in turn has become a culture of the school over the years. Similarly, the teacher-collaborators also felt that the school culture of including outdoor education as an integral part of the school curriculum has resulted in the buy-in by the majority of the teachers. The form teachers in each class were given the option to accompany the students during the camp and most opted to do so. Feedback gathered from them by the teacher-collaborators also indicated that the former saw the benefits of the place-responsive camp though some felt that it was physically too challenging. The majority of the form class teachers have expressed willingness

to participate in the programme again the following year.

Competency and agency of the teacher-collaborators

Having a team of committed colleagues who believed in the value of outdoor education was deemed essential by the teacher-collaborators. The teacher-collaborators opined that they were fortunate to have an outdoor education specialist team in the PE department plus some non-PE teachers such as Peng, Ray and Keng. These teachers not only have the agency but also have the motivation to trial new pedagogies such as the place-responsive approach in their outdoor education practice. The commitment of the PE teacher-collaborators could be seen in the willingness to avail themselves to the students outside the prescribed PE periods to discuss their camp plan. This is described by Keng below.

I don't know how the PE teachers actually set aside time to do this on top of the things that they usually do but I'm very impressed that they can actually have this time for the students. They actually set aside time for the students to go through this very important process. So time is one factor. They are very passionate outdoor educators in the school who want to bring the students through the camp.

Keng (Individual Interview, April 2013)

Here Keng attributed the successful adoption of the place-responsive camp to the PE teacher-collaborators. She believed that it was their passions and beliefs in outdoor education that drove them to set aside the additional time needed to guide their students through the process of planning and organising it. The beliefs of the teacher-collaborators in the value of outdoor education were also a positive aspect that Hwei attributed to the successful implementation of the camp.

The team is also one who believes in outdoor education. While some may be less 'outdoorsy' than others in their personal life but I think they all feel that they have the level of competency to handle also. So I think that is important. Sometimes I was just thinking that if the team were any different; thinking of the past members and all that; we might have some resistances. From here till the time we get new members, I

think really it is about, sort of making it a culture so when people come on board, they have to adapt to it.

(Hwei, Individual Interview, April 2013)

Here Hwei, the team leader, suggested that having a team with members who believe in the value of outdoor education and are competent in delivering it is essential to the success of the place-responsive programme. She also alluded to the importance of having a cohesive team who can turn the practice of outdoor education into a culture. This was corroborated by all the teacher-collaborators including the three non-PE teacher-collaborators. Peng, Keng and Ray felt that all their colleagues in the PE department were supportive and encouraging towards each other despite the challenges of adopting the place-responsive approach for the first time.

Limited knowledge and experience in a place-responsive approach

Whilst the teacher-collaborators believed that the adoption of the place-responsive approach was a success, they also reiterated the areas that can be improved. The limited knowledge and experience that the teacher-collaborators have in place-responsive learning is a barrier that inhibited their practice. For instance, Bao received informal training on the place-responsive approach from Hwei and Ray and thus had limited knowledge and understanding of it. Hence, he shared that:

I think when we do activities like these we are very conscious of wanting to introduce the place to the kids. We don't have the pedagogy, we don't have a deeper understanding of what is all this about but essentially we are already doing it.

(Bao, Individual Interview, April 2013)

The limited knowledge and experience in place-responsive pedagogy, in turn, posed a challenge to the teacher-collaborators on the extent they were able to share their knowledge and understanding to the accompanying form class teachers prior to the camp. Peng alluded to this:

Challenges like whether do we have the teachers who know what is going on

to carry out what is to be done or do they just see it like another ‘accompanying the students out’ kind of learning journey? So a core group of teachers know what’s happening, how to implement it. It doesn’t mean that it translates down to the teachers knowing how to do it because each time you filter down from one layer to another layer to another layer, it just gets watered down. As much as we tried it will never be the same as the originator idea of how it’s to be done. Because I think plus a bit of creativity here and there; you add in a little bit here and there; and by the time you filter down to a few more generations as you passed it down, I am not sure whether the meaning is going to be there or maybe it will just morph into something else.

(Peng, Individual Interview, May 2013)

The teacher-collaborators also expressed their concern of the lack of knowledge and expertise in a place-responsive approach in outdoor education locally which inhibited their professional development in their practice.

Managing the involvement of the uncommitted Form class teachers

Another challenge the teacher-collaborators faced was with some of the form class teachers who were accompanying their class during the camp. Whilst the vast majority of the teachers understood the usefulness of the infusion of the place-responsive approach in enriching the learning experiences of the students, some may not agree with certain aspects of its design and implementation. The extent of buy-in to the place-responsive camp amongst the form class teachers who opted to accompany their students in the camp is also dependent on their comfort level operating in an outdoor environment.

Well, I think there are feedbacks that some teachers felt very obliged to follow the students even though they are given the leeway of opting out as there will always be another teacher who will be following them if the teacher is not comfortable. But I think some teachers might be obliged to stay on and because of that they got into some physical discomforts. And these physical discomforts can manifest themselves through verbal means and when they start to complain, it kind of spoilt

the mood. I have been thinking of how to get the teachers to buy in because after all whilst I see a lot of value in this, it doesn't mean that everybody else sees the same value. That even if I can say the meaning about it, like list ten good things about it, it also doesn't mean that there's going to be a buy in. So once the teachers don't have that buy-in, it becomes a bit difficult to push the class, et cetera. So maybe they will just sit in one corner: "Okay, anything lah." but they are not actively participating. Well, the choice of teachers is also one thing we can look at.

(Peng, Individual Interview, April 2013)

Here Peng reiterated the concern of the team that the accompanying form class teachers who were unable to cope with the physical challenge of the journey may become a negative influence to the students. She alluded to the need to select suitable teachers who can cope with the physical demands of an outdoor journey in addition to the option for them to opt in to participate. Another concern is over the lack of understanding by some class teachers on why the camp was carried out in a certain way by the team.

Another thing is really the Form Teacher... I think it is just one Form Teacher who did go around and telling other colleagues and putting on Facebook about how tough it was. So I think these sorts of things; the negative impact can spread by other people who don't understand the camp, how it was done. And there was also feedback that they (students) didn't plan well at all. But that was the whole idea! The whole idea was that they were supposed to put their plan into action and see whether it works or not! It was a fail-safe environment. I was just very annoyed that teachers will say things like that.

Second was, I felt that some teachers stepped in too much. But this is very personal. We can say it many times like leave it to the kids and all that but some teachers – it is just their style; they just like to come in and take over. I felt that they could have left it more to the students.

Hwei (Individual Interview, April 2013)

Here Hwei expressed her concern over the potential impact on the place-responsive learning by the students caused in part by the lack of understanding of the objectives of the camp by a few form class teachers. This has resulted in criticisms of the students' planning and delivery of the camp. It also led to the perception of excessive interventions by some of the form class teachers which may be detrimental to the desired learning for the students. All of the teacher-collaborators believed that giving the agency and autonomy to the students to plan and implement the camp programme without unnecessary interventions from the accompanying teachers is an important aim of the camp.

Ineffective facilitators provided by private outdoor service provider

The necessity of engaging the outdoor service provider was reflected upon by the BSS team. The team felt that the service provider engaged was an inhibitor to the place-responsive learning due to their inefficiency resulting in the delay of some segments of the camp programme. The two camp facilitators assigned to each class by the outdoor service provider also proved to be more of a hindrance than help. The assigned role of these camp facilitators was to assist the team of teacher-collaborators to manage the conduct and safety of the outdoor activities planned by the class. The team of teacher-facilitators felt that the camp facilitators who were mainly tertiary students on part-time employment were inexperienced and ineffective in performing their role.

But for the vendor's side, we really left it to the coordinating person to liaise with us. Many aspects of it they failed to deliver what was promised and we had to go in to help them. It's just that managing the vendor during the expedition was a bit tough. But on our side we were a little bit 'kiasu' (afraid to lose) because it's the first time we're running it. So that's why we planned for two facilitators (from the vendor). Throughout the whole experience when we talked about it, we realised that in actual fact we don't really need them.

Bao, (Focus Group Discussion, April 2013)

Here Bao commented on the disappointment faced by the team in the failures of the service provider engaged to support the place-responsive camp. Upon the post-camp reflection, the team felt that the engagement of the outdoor service provider was not necessary. They found that the camp facilitators were a hindrance on some occasions during the camp to the enactment of the programme.

Inadequate allocation of time for the place-responsive experience

Another key constraint is the time allotted for the students to plan and deliver the place-responsive camp. The teacher-collaborators felt that the lack of time to plan for the camp is a barrier to place-responsive learning as it limits the research and preparation of the place immersion experiences for both the teachers and students. The relatively short time spent in the places visited prevented the students from engaging in a deeper experience of place. The teacher-collaborators felt that a contributory factor is the short duration of the camp with two days spent on the actual journey. The scheduling of the camp programme had also limited the time the students could spend in the places visited. For instance, some classes opted to fix the time for private bus transportation to bring them to the next planned destination. Delays caused by factors such as bad weather and varying speeds of travel resulted in a rush for students to meet the scheduled bus pick-up time. These, in turn, reduced the time spent in the place. Thus, an aspect that the teacher-collaborators felt could be improved is to lengthen the duration of the camp.

The next section examines the findings for the fifth research question on the viability of the adoption of the place-responsive approach in the outdoor education programme of the two schools.

Viability of the adoption of the place-responsive approach

The analysis of the data in BSS following the adoption of the place-responsive camp suggests that it is a viable approach in outdoor education despite some challenges as described. With regard to the data analysis, two themes emerged: (1) the place-responsive approach is a complementary pedagogy for the achievement of the desired student learning outcomes; and (2) the ease of design and implementation of a place-responsive approach.

Place-responsive approach is a complementary pedagogy for the achievement of the desired student learning outcomes.

The teacher-collaborators viewed the place-responsive approach as a complementary platform for the development of school values, student leadership development, 21st century competencies and the desired learning outcomes espoused by MOE. They realised its potential in achieving the MOE desired learning outcomes for their students. These outcomes aim to develop a student who is a confident person, self-directed learner, concerned citizen and active contributor. They felt that the place-responsive approach fits well with their aim to achieve these desired learning outcomes. As described by Yan and Vaugh below, the approach taken in the design of the place-responsive activities supported the development of the desired learning outcomes.

I like the fact that they visited the places and they did their research on the places before going there and they also shared with their class. It's an opportunity for them to present to the class in a non-classroom situation. But I must say that even for my class, most of them are relatively shy... they are shy to present, they don't really speak in a loud tone, et cetera. So it is a good experience for them.

(Yan, Individual Interview, April 2013)

I could see the 'self-directed learning' very evidently throughout. Then as an 'active contributor', that means at every stop, rest station, after the presenter presented, they actually asked questions to clarify further. For example, at the Alkaff Mansion (Heritage site) they asked: "When was it built? Who was the first family who lived there? I thought that was very simple but impactful questions that till now I still remember. Then being a 'concerned citizen, this whole place-based learning actually allowed them to questions and learn about the past to prepare for the future. So I think it is a really wonderful platform to really strengthen the 21st Century competencies. So I am definitely in for it.

(Vaugh, Individual Interview, April 2013)

Here Yan implied that besides learning to be place-responsive, getting the students to research and present their findings of the place in a public and non-classroom setting is a confidence-building process. This was supported by the other teacher-collaborators who narrated the students' experiences of sharing their research findings of the heritage place visited and interviewing some overseas visitors on site as a confidence-building process for the students. In the same sentiment as described by Vaugh above, the teacher collaborators believed that the process of researching, planning, and sharing their knowledge of the places visited enabled the students to be self-directed learners and active contributors. The place-responsive assignment theme of 'learning about the past to prepare for the future' aims to get them to gain a critical edge through the learning of the issues associated with the places visited. The teacher-collaborators also felt that the place-responsive approach and journey format provided ample opportunities for the students to display leadership capabilities.

All of the teacher-collaborators saw the adoption of the place-responsive learning via the journey format as a better approach than the camp format adopted previously. The teacher-collaborators preferred the place-responsive approach as it empowers the students to choose an aspect of a place that they are interested in, to learn and share with their classmates. This approach through the learning about, from and in the place also provided opportunities for the students to learn through making their own decisions and mistakes. The teacher-collaborators believed that these values made the learning more authentic.

Another value of a place-responsive approach via journeys is that it can present opportunities for serendipitous learning to take place. This is illustrated by Wai during his class journey to Bukit Timah Nature Reserve.

We actually even went to knock on the door of one of the residents, at the foot of Bukit Timah Reserve. The house was a bungalow... There were a lot of 'toy' cars parked outside. And the students said, "Wow, if only I could have one of these cars! How much do you think this car is?" I said, "I don't know but do you want to find out?" And they looked

at me and were like: “How to find out?” I said, “Why don’t you ring the doorbell?” You know it was something different from “Oh, where did this come from? What happened to this estate?” They weren’t so interested in the estate per se, because they felt they knew so much about the estate which wasn’t the case. So, I said, “Why don’t you ask him?” And he said: “Yeah!” And that guy (owner) actually had a vintage car collection as well... I said: “Why don’t you ring the doorbell?” ...And one of them went to ring the doorbell; the rest of them just ran! I stood there with him...So that guy came out; surprisingly quite young; 40, 50 years old; and he asked “Yes, can I help you?” One look and he said: “Are you having a camp?” I said, “How do you know?” He said: “Oh, I used to be a school teacher as well.” ...So, he’s like, “Oh, how can I help you today?” And when I turned back, I saw that all the students are all back. I said, “Why don’t you ask him the question you asked me just now?” And the student actually stepped out; he knew the procedures to introduce himself representing the school, “Oh, I am Lionel from BSS. I would like to ask you how much are your cars? Is it very expensive?” And the guy laughed and said, “Depends on what you mean by expensive.” He (student) said, “Is it one million dollars for everything? He (Owner) said, “Not for everything. Maybe for four of these, it is about a million.” And I said, “I guess so.” He (student) said, “Huh? So expensive!” He (owner) said, “Oh, I restore the cars and it is just my hobby.” And I said, “Why don’t you ask him how long he has been staying here and what does he know about this place; and has it changed all along?” The first thing the guy said, “Yeah, there’re a lot of traffic jams now. It’s really bad!” He said it’s because they are trying to build the Downtown Line (MRT) and it is affecting the entire estate. Even the monkeys don’t come here anymore. There used to be a lot of monkeys. He said the monkeys don’t come down from the hills any more. They used to come down and play around his cars and when he woke up in the morning he had to chase them off the roof of his car but not anymore. He said with the heavy traffic and he even checked the property in Upper Bukit Timah, just down the road and he said, “Same thing, the traffic is even worse there.” And the boy said, “Yeah, that is

because people like you drive many cars!” And he laughed. He said, “Well, but I only drive one car. I know my limit. It was quite funny. My interpretation of the situation is that at least one boy of the thirty-odd students knew the situation; know what is happening to at least what used to be an almost pristine condition.

Here Wai was able to use the interest of one of his students on vintage cars to enable the class to learn more about the issues facing the community and place. Wai understood the value of a place-responsive learning as a way of seeing, knowing and understanding the real world through connection between people and place. The unplanned lesson also created opportunity for his student to develop his self-confidence and interviewing skills. Asfeldt and Beames (2017) argue that “well-conceived journeys will present a myriad of unpredictable experiences that have the capacity to elicit meaningful and enduring learning” (p. 77). They narrated the uncommon experience of a participant encounter with a wolf during an expedition which created a profound impact on her learning. They argued that a primary role of a wilderness educator is to recognise such moments to help students maximise their learning from them.

Ease of design and implementation of a place-responsive approach in outdoor education

To become a place-responsive outdoor educator was a relative easy task to do as described by the teacher-collaborators. They acknowledged that while additional efforts are needed to do their research and reconnaissance of the places to be visited during the camp, the potential learning about and in the place for the students made the endeavour worthwhile educationally. The teacher-collaborators felt that the adoption of a place-responsive approach will make the teaching of outdoor education more accessible to those teachers who are less inclined towards teaching technical outdoor skills. Hwei, the team leader, believed that unlike the traditional outdoor adventure activities which would require the outdoor educator to have technical competency skills in the activities, a place-responsive approach could be taught by any teacher without a need to have in-depth technical outdoor activities skills.

Perhaps the viability of the place-responsive approach in outdoor education can be seen in the teacher-collaborators' motivation to continue with it for the camp in the following years after the research project in 2013. All the teacher-collaborators expressed their satisfaction with the place-responsive approach in developing the desired learning outcomes for the students. They expressed their intention to continue with this approach in their outdoor education practice. They were also unanimous in deciding to continue with the adoption of the place-responsive approach for the secondary three cohort camp the following year. A check with Hwei, the team leader in an email conversation in 2016 revealed that the place-responsive approach was similarly adopted after the pilot for the secondary three student cohort camp in 2014, 2015 and 2016 with the camp duration extended to four days.

Issues in adopting a place-responsive approach in outdoor education

Whilst all the teacher-collaborators were encouraged by the positive learning outcomes of the camp, they also expressed their reservations over the extent of the place-responsiveness that the students developed. They understood the limitation faced in developing an immediate connection to the place with a first visit. Two of the teacher-collaborators Ray and Keng, believed it would be better if the same cohort of students went through a place-responsive camp again the following year to re-visit the places they went through the previous year. They felt that the duration of the camp did not allow for sufficient time for the students to immerse in the place experience and to respond to the place.

But at least now they know the place exists. Right now, I think what they lack is even about the knowledge of the place. So with this one, I mean it's hard to ask them to... "oh, today, you want to protect this place or you want to preserve this place or stuff like that because for some of them, it's their first time there. So we can't expect like being their first time there, you get the connection with the place instantly. So I think it's more like getting to know the place, know the place exists

first. And probably in terms of, knowing even the animals or birds they see along the path.

(Ray, Individual Interview, April 2013)

Here Ray reinforced the understanding of the limitation of a single visit to develop an immediate connection to the place. Nonetheless, they believed that getting the students to know of the existence of the place is an important first step to develop place-responsiveness. Of particular concern to the team was the measurement of the place-responsiveness of the students as commented by Hwei below.

I think when we are talking about leadership, life-skills, inter-personal skills, I find that part we have achieved the objectives. The only thing is in the place-responsive part, it is a bit difficult to measure. Have we really achieved the objective? Unless we go back some time, few months down the road, and then we ask them some of the things they have learned about the place. But then again, learning about the place does not mean that they feel for the place. So I find that part, whilst it had been done, I am not sure to what extent the objective has been really achieved.

(Hwei, Individual Interview, April 2013)

Here Hwei implied that a follow-up action is required to determine the extent of place-responsiveness the students have developed. She espoused the view of the team on the limitations of the one-off camp in having a deeper level of responsiveness to the places visited. Related to the 'level' of place-responsiveness is the need to measure it. The measurement of the extent of place-responsiveness attained by the students was a subjective aspect that the teacher-collaborators grappled with. Hwei, for instance, questioned whether she could take the students to a 'higher level' in place responsiveness. The 'degree' or 'level' of place-responsiveness is also something that Wai reflected upon.

The experience of the teachers showed me that while we designed it, the response is also individual... I think it's definitely something that I will use in the future if given the opportunity again, but at the same time also bear in mind that the outcome will be based on the individual.

(Wai, Individual Interview, April 2013)

Here Wai suggested that the level of place-responsiveness attained by the students may vary as the students' experience and respond to the place differently. He opined that the students' interest and motivation to learn about a place plays an important part in how they respond to it.

The importance of knowing the local places where the students are visiting was also an essential aspect that the teacher-collaborators felt they needed to equip themselves with. They felt that having intimate knowledge and experiences in the places would help them to tap into the potential of the places for the students' learning. Time and effort have to be invested for the teacher-collaborators to get to know the places to be visited. Some of them spoke of having to do their own reconnaissance trips several times for the routes that the students planned and changed overnight.

Overall, the teacher-collaborators were encouraged by the adoption of the place-responsive approach in the secondary three cohort camp. They felt that the adoption of the place-responsive approach in BSS is a viable option that has broadened their understanding and delivery of outdoor education. They enjoyed the process of designing and carrying out this approach and looked forward to continuing it in subsequent camps, as summed by Bao below.

I enjoyed it very much. I mean right from the end I already told Hwei that I will do it again next year and I hope to improve on certain AFIs (Areas for Improvements). I would do this many times over. (Bao, Individual Interview, April 2013)

The successful adoption of a 'new' social structure in the form of a place-responsive approach in their outdoor education practice has in turn influenced the teacher-collaborators to consider its adoption in the other outdoor learning programmes in the school. Peng, Keng and Ray have incorporated aspects of the place-responsive approach in the full-day outdoor environmental education learning programme for the secondary two student cohort. The PE teacher-collaborators have also planned to incorporate the place-responsive approach in some of the outdoor education

components such as the orienteering and navigation modules in the PE syllabus. There were also plans by the teacher-collaborators to adopt the place-responsive approach in programmes such as the outdoor education modules of the PE curriculum and environmental education modules for the secondary two student cohort.

Summary

The findings from the BSS case study indicated that the enablers to the successful adoption of the place-responsive camp were: (1) the trust and support of the school leaders and form class teachers; (2) the school culture; and (3) the team of committed and competent outdoor education teachers. Barriers encountered by the BSS team included: (1) the limited knowledge in designing and adopting a place-responsive approach; (2) managing the involvement of uncommitted form class teachers; (3) ineffective camp facilitators provided by the appointed service provider; and (4) inadequate allocation of time for students to immerse themselves more in the experience of place.

The complementary role in developing the desired MOE and the school learning outcomes and the ease of design and implementation of the place-responsive approach are the two themes that emerged from the data analysis. The BSS team also raised issues such as the limitation of the one-off camp in developing and measuring the students' level of place-responsiveness, and the need to know the visiting places well before the visits. Despite these issues raised, the BSS team believed that the adoption of the place-responsive learning in their outdoor education programme is a viable approach given the complementary role it played in achieving the MOE and the school's desired learning outcomes.

Case Study 2: Place-Responsive Pedagogy in CSS

Enablers and barriers to the design and implementation of place-responsive outdoor education pedagogy

In the case of CSS, the teacher-collaborators identified the enablers for the adoption of the place-responsive approach in the overseas project work and adventure camp as: (1) the trust and support of the school leaders; (2) heads of departments and teaching staff; (3) the school culture; (4) cross-department collaboration; (5) the support of authoritative and allocative resources; and (6) reliable service and support from service providers. Barriers encountered by the CSS team included: (1) communication in a foreign language overseas; (2) getting the right service provider for the overseas camp; and (3) inadequate allocation of time for students to immerse themselves more in the place.

Trust and support of school leaders

The four CSS teacher-collaborators felt that a strong enabler to the successful adoption of the place-responsive approach in the overseas project work and adventure camp is the principal and her management team. The CSS teacher-collaborators asserted that the belief of the principal in outdoor experiential learning was instrumental for the development of the Education for Life (EFL) programme which is offered to all the students across the five levels. The principal was also instrumental in initiating the formal appointment of the head of outdoor education to drive the outdoor learning programmes in the school. All the teacher-collaborators agreed that the support of the management team - principal, vice-principal and heads of department - were essential for them to adopt a place-responsive approach in the overseas camp.

School culture

The school culture played an important role in the successful implementation of the place-responsive approach in the overseas project work and adventure camp. The adoption of outdoor experiential and adventure learning as an integral platform of the EFL programmes for all levels of students has led to the formation of a school

culture that promotes active participation. Both students and staff are encouraged to participate actively in outdoor experiential learning. The assimilation of outdoor experiential learning as an integral part of the school culture had made it easier for the CSS teacher-collaborators to successfully adopt the place-responsive approach in the secondary two student cohort overseas camp successfully.

Cross department collaboration

A unique feature of the secondary two EFL programme is the project work and adventure camp segment. Huat and Yun from the science department helmed the project work segment while Choo and Dan from the PE department helmed the adventure-based learning segment of the camp. Both the project work and adventure camp segments involved the collaboration of the various departments due to the inter-disciplinary contents of the camp programme. For instance, the secondary two EFL programme incorporates the humanities (geography, history) and science (physics, mathematics) subjects with outdoor education.

Resources support – authoritative and allocative resources

The school management has considerable power over the authoritative and allocative resources needed for the teacher-collaborators to carry out the overseas camp. Strong support in terms of the use of these resources was also given to the team of CSS teacher-collaborators to adopt the place-responsive project work and adventure camp overseas. The principal, vice-principal and the heads of department used their authoritative power to encourage their staff to support the overseas camp. The allocative resources included the funding and time off given to the teacher-collaborators to make a pre-trip visit to Kota Tinggi to get to know the place. The school also obtained funding from the school cluster to subsidise the cost of the trip for the students.

Reliable overseas service provider to support the adoption of the place-responsive approach

For overseas learning trips, schools are required by the MOE to engage a licensed travel agency or service provider to take care of the insurance, travel, and

accommodation arrangements. Getting a reliable and effective service provider who can deliver the school's planned programme is essential to achieve the learning objectives set for the students. In this aspect, the teacher-collaborators believed that the school has engaged a reliable service provider who is able to work with them to deliver the place-responsive overseas camp.

They are quite supportive...if you tell them, "Okay, I need a village. I need interaction with the villagers over there. Can you suggest anything that can help me?" They are quite supportive to that. They will just tell you, "Okay you want a three-day camp, we will try and work around the schedule and we will try to look for the villagers to help us." I mean in the sense because this vendor doesn't believe in doing community service just for the sake of doing community service. It must be something that will help them (villagers). They also don't believe that we do cultural exchange just because we want to do cultural exchange. It must be something close to their normal daily lives. So instead of them (students) going to a school or whatever, they brought them to a village. Let them experience how a village look like, feel like and how they live. So actually the Boss of this group (vendor) is really very supportive throughout the programme. I think this vendor works really fine; I worked very well with them.

(Dan, Individual Interview, April 2013)

Here Dan expressed his satisfaction with the appointed service provider who understood why and what the team was attempting to do in implementing the place-responsive learning. Hence the service provider provided effective support to the team to deliver the desired learning.

Inability to speak the foreign language overseas

A major challenge in the overseas project work and adventure-based camp was communicating with the local villagers whose spoken language, Malay, is foreign to most of the students. This inhibited the extent in which the students could interact with the villagers, resulting in some lost learning opportunities. Though the school

had conducted conversational Malay lessons for all the students in secondary one, many of the non-Malay students still lacked the ability and confidence to speak and understand Malay. This lack of confidence could be attributed in part to the time lapse between the conversational Malay lessons held in secondary one and the camp in secondary two. The nature of the camp schedule was such that the students visited the village during the day on weekdays. This meant that the young working adults, some of whom could speak English, were not be around. Only the non- working adults, mainly the elderly in the village, were left to interact with the students. The interviews of these villagers by the students to learn more of the social, cultural and historical aspects of the village and peoples had to be conducted in the Malay language as most of the elders could not speak English. These were conducted with the assistance of the few Malay students in CSS who acted as translators.

Due to the small numbers of Malay speaking students among the campers, interaction with the villagers was sometimes reduced to the use of hand gestures. Thus, the teacher-collaborators felt that there was a need to prepare and motivate the students to take the conversational Malay lessons more seriously.

Yeah, then I was thinking maybe there are some things we can do for next year... Because they are always asking the same aunties for interviews, maybe we can actually get the agency (service provider) to bring in maybe the Headman or somebody or a few of them so that each class can have one or two persons to talk to. It could be even young students like university students around, see whether they can have more interactions. I mean that is an AFI (Area for Improvement) I think. The aunties are like: "Of course I like it here! This is my home!" when the girls asked them questions on whether they like their place.
(Choo, Individual Interview, April 2013)

Choo expressed the views of all the teacher-collaborators about the limitations of getting a large cohort of 193 students to interact and interview a relatively small group of villagers. She suggested that improvement could be made the following year to make provision for the Headman, other villagers, students and university undergraduates who could speak English to be invited in the evening to interact

with the students.

Inadequate allocation of time for the place-responsive experience

One constraint that the teacher-collaborators shared was the lack of time for students to immerse more in the place-learning experience. This was due to the many scheduled activities, which posed a challenge to the teacher-collaborators in determining which of them to strike off. Choo and Dan also recognised the need to cater more time for the students to immerse in the place experiences rather than to focus on doing the adventure activities. For instance, they felt that an improvement to the kayaking journey down the Sungei Johor river could be made to allot more time for the students to engage in place-responsive learning through observing and interacting with its inhabitants. They believed that this could be achieved by reducing the team building kayak games played previously. Similarly, they understood the need to review the relevance of some adventure activities traditionally conducted at the campsite such as the team-building and initiative games.

The next section addresses the fifth research question on the viability of adoption of the place-responsive pedagogy in outdoor education.

Viability of adoption of place-responsive pedagogy in outdoor education

The data analysis from the CSS case study suggested that the introduction of place-responsive learning in an overseas project work and adventure-based camp is viable in terms of achieving the desired learning objectives of the students. These objectives included getting the students to know and learn from the social, historical, cultural and geological affordances and constraints of the overseas places visited, leading to consequential lessons back home. Two similar themes from the BSS case study were derived in the CSS case study. The two themes are: (1) the place-responsive approach is a complementary pedagogy for the achievement of the desired student learning outcomes, and (2) the ease of design and implementation of a place-responsive approach.

Place-responsive learning is a complementary approach for the achievement of the desired student learning outcomes

The CSS teacher-collaborators saw the adoption of a place-responsive outdoor education programme in the overseas camp as a complementary approach to the school based curriculum. They were unanimous in their view that the place-responsive approach is aligned with the MOE and school goals of developing the MOE 21st century competencies and problem solving, research and communication skills respectively. For Huat and Yun, who were in charge of the project work segment of the camp, the incorporation of the place-responsive approach lent itself perfectly to the problem-solving, research and communications skills that the project work aimed to achieve in the students. They relished the opportunities provided in this approach to get the students to research into the social, cultural, and historical aspects of the Kota Tinggi and its people. It also enabled the students to attempt to solve an authentic problem and promote the social, cultural and historical significance of the place as part of the effort to increase the livelihood of the local people. The students had to work on their communications skills when they interacted and interviewed the local villagers during the trip. Likewise, Choo and Dan who were in charge of planning the adventure based component of the camp also did not see any conflict between the adoption of the place-responsive approaches and adventure-based programme. Loynes (2002) alludes to the perception by some outdoor educators that the natural environment is often understood as an assault course, gymnasium or puzzle to be solved. With the adoption of the place-responsive approach, Choo and Dan understood that the places where they conduct the adventure activities, for instance the Sungei Johor river where they did the kayak journey, was not meant to be a physical problem to be resolved and controlled. Attempts were made during the kayak journey to get the students to reflect and respond to the place through a series of questions.

Aligned with the place-responsive learning objectives, the students were also expected to develop their global awareness during the overseas camp. This could be achieved through learning about the social, cultural, and environmental issues in the place (Kota Tinggi). Subsequently, after the camp, the students had to do a presentation of their project work in the class, which required them to identify the

issues in the place and propose a solution to them. The students had to reflect on the learning and linked it back to the Singapore context as described by Huat below.

I think part of it is also because we are using the Trip for Internationalisation Experience (TIE) fund, so we must make sure that the students bring back their learning back to the local context. Like “how does it feels to be Singaporeans”, “what are the things you saw there that make you treasure Singapore, et cetera.

(Huat, Focus Group Discussion, April 2013)

Here Huat alluded to the national goal of developing the global awareness of the students in sending them for an overseas learning trip in order to develop a sense of identity in being a Singaporean.

Ease of implementation of the place-responsive approach

Despite the added need for the teacher-collaborators to research and pay a pre-camp visit to the site in Kota Tinggi, all shared that they did not find it difficult to incorporate aspects of place-responsive learning in the secondary two EFL project work cum adventure-based camp programme. The teacher-collaborators also believed that the incorporation of place-based learning may be something that they have unconsciously infused in their teaching in the past as pointed out by Yun:

Actually I don't find it difficult to implement. It has been something that maybe we have been doing but not specifically know we are doing it.

(Yun, Individual Interview, April 2013)

Here Yun commented that it was not a difficult task for her to design and incorporate place-responsive learning. She also expressed her view that it was something she felt more comfortable to design and implement than doing the adventure activities.

Issues in adopting a place-responsive approach in outdoor education

While the teacher-collaborators saw the strength of the overseas project work and adventure camp in integrating the various subject disciplines with outdoor adventure learning, they also realised the short coming of the separation of roles for the design of the place-responsive approach between Huat and Yun for the project work segment and Choo and Dan for the adventure learning segment of the overseas camp. This affected the full integration of the place-responsive approach in both the project work and the adventure activities camp segments.

Need to involve the other teachers in the design of the place-responsive approach

Whilst the teacher-collaborators were satisfied with the outcomes of the adoption of the place-responsive approach in the overseas camp, they also recognised the need to make improvements to the design and implementation of the cross-disciplinary contents of the camp programme.

I think the main challenge is coming up with the ideas to incorporate the place-responsive approach. First, we must have the idea, then we can come up with the activity to suit the idea. For example, they (teachers) thought of getting the students to draw the map of the campsite. So that was actually one of the new ideas we have. I mean to come up with the map, they (students) will have to walk around the campsite, they need to observe things. I mean it is actually a good way to know more about the place. So I think what they need to do is to get more people to get different views, and to get more people to adopt this place-responsive approach.

(Dan, Focus Group Discussion, April 2013)

Here Dan spoke about how involving the other teachers in the design of the place-responsive learning may lead to good ideas and also result in better buy-in to the approach. Given the relatively small team of four teacher-collaborators involved in the initial design and implementation, they realised the need to involve more of the teaching staff in the design and planning of the camp.

I think it will help in the sense that if we have more views because we have only two people, we only have inputs from two people or only suggestions from only two people. Like when we went for the recce, they gave certain suggestions on what you can do here, what you can do there and so on. But if you have people from different contexts, maybe they can give you more insights as to what should be done to better harness the potential of the place.

(Huat, Focus Group Discussion, April 2013)

We will definitely need to...meet together and to brainstorm together instead of leaving it to just one person or two people. We need more people on it and to believe in place-responsive, and to really see how...that means all the teachers involved in Project Work. They must all be involved in the planning so that they know how to carry out the lessons. If they just get the SOWs (Scheme of Works) then they follow, they will have no idea what it's about. So more of not leaving them so much alone but coming in to help out more.

(Choo, Individual Interview, April 2013)

Here Huat and Choo reinforced the belief by all the teacher-collaborators of the importance of having more people on board during the design and planning phase. They believed that the involvement of more people from diverse backgrounds and disciplines would help to provide different perspectives on harnessing the potential of the place-responsive learning.

Safety considerations in some outdoor adventure activities may affect the place-responsive learning

In a place-responsive trip, it is apparent that safety aspects can be a drawback to place responsiveness in some adventure activities that require basic competency in technical skills such as kayaking on a river. Choo and Dan commented that the safety of their students while doing an adventure activity tended to preoccupy their mind and time. They believed that this sometimes led to lost opportunities for the

teachers to teach the students to observe and respond to the place. They quoted the kayaking journey down the Johor river as an example. While they managed to find time during the kayaking journey to introduce some aspects of place-responsive learning, they felt that more could have been done if not for the safety concerns like how to take care of the students with motion sickness, and dealing with injuries. Though they did attempt to get the students to be more aware of their surroundings through a series of questions on sighting of flora and fauna, and what the local villagers and fishermen were doing, et cetera, they felt that they had not harnessed the full learning potential of the place.

Interaction with local villagers for place-responsive learning

One limitation to the place-responsive learning was in the day visit to the local village for the students to interact with the villagers and interview them. The teacher-collaborators suggested that the visit to the village could be improved by getting the students to interact with different groups of people at different levels. The involvement of a more diverse group of locals such as teachers and students to interact with the visiting students would be useful for the latter to understand the social, cultural, historical and environmental issues of the place. This interaction could be done in the evening including talks by the locals on the historical and cultural significance of the place.

Overall, the teacher-collaborators believed that the adoption of the place-responsive approach was successful as the students were definitely more aware of the place they visited. They commented that the students have certainly learned more of the place and are conscious of it than the students who did the overseas camp at the same place previously. The place-responsive approach has shifted both the focus of the teachers and students away from merely doing activities, to one in which they are place-conscious.

Despite the limitations of an overseas camp in getting the students to connect and respond to a non-native place, the teacher-collaborators believed it to be useful in getting to the students to reflect and link the learning back to Singapore. The presentations given by many of the students after the camp reflected their

understanding of what it means to identify with one's own place and country. Perhaps a testimony of the viability of the place-responsive approach in outdoor learning is the affirmation by all the teacher-collaborators that they will continue to adopt it in the future.

Summary

The findings from the CSS case study identified the enablers to the successful adoption of the place-responsive overseas camp as: (1) trust and support of the school leaders, heads of departments and teaching staff; (2) school culture; (3) cross-departmental collaboration; (4) support of authoritative and allocative resources; and (5) having reliable service providers. Barriers encountered by the CSS team included: (1) communication in a foreign language overseas; and (2) inadequate allocation of time for students to develop place-responsiveness.

Two themes emerged from the data analysis on the viability of the adoption of the place-responsive approach. Firstly, the complementary role in developing the desired MOE and school desired learning outcomes, and secondly, its ease of design and implementation. Other issues that surfaced included the need to: (1) better integrate the project work and adventure-based learning segments of the camp; (2) more involvement of the other teachers in the design and implementation of the place-responsive approach; and (3) safety considerations in some adventure activities that may affect the place-responsive learning. Despite the issues surfaced, the CSS team believed that the adoption of the place-responsive learning in the secondary two EFL programme is a viable approach given the complementary role it played in achieving the MOE and school's desired learning outcomes for the students.

Cross Case Analysis

The findings of the research project revealed some similarities as well as differences between the two case study schools. The outdoor education programmes in both schools focussed on primarily on the inculcation of values, personal and social development, social emotional competencies and life-skills. Both teams of teacher-collaborators described the enculturation process of role modelling their more

experienced colleagues as significant to their acquisition of knowledge, belief and practice in outdoor education. There is also a common perception by both team of teacher-collaborators that PE teachers are more suited to teach outdoor education as it involves adventure-based activities. Prior to the adoption of the place-responsive pedagogy, the teacher-collaborators perceived outdoor education as comprising mainly outdoor adventure activities. They also believed in the need for outdoor educators to be competent in the technical skills in outdoor adventure activities.

Whilst the BSS teacher -collaborators believed it is sufficient to use local places for their outdoor education programmes, the CSS teacher-collaborators thought otherwise. The latter believed that there is a lack of natural environment such as the mountains, rivers, and the wilderness in the largely urban landscape of Singapore for their adventure-based outdoor education programme. This has implications on the way the outdoor education programme is carried out due to the different social and cultural factors presented overseas.

Given the viability of the adoption of the place-responsive approach in the two case study schools based on the findings, an exploration on how it might be implemented in other secondary schools is presented in the next chapter. This will be done firstly, by examining the lessons that were learned. Strategies in terms of the design principles will be identified for the better implementation of the place-responsive approach.

Chapter Nine: Towards Sustainable Outdoor Education Pedagogies – The Role of a Place-Responsive Approach

Introduction

This thesis sets out to challenge the predominant conceptions and practice of outdoor education in Singapore schools by proposing place-responsive pedagogy as an alternative. I argue that current practice in Singapore is decontextualized from real world situations as it neglects many of the social, cultural, historical and ecological aspects of local landscapes, places and community. In light of the global issues of climate change, environmental degradation and increasing pressure on ecosystems to cope with resource demands, the present position is unsustainable and needs to be changed. A place-responsive pedagogy is one approach supporting a more sustainable practice.

This concluding chapter discusses the implications of this study with reference to the research questions (see pp. 118-119). Specifically, it explores the theoretical, practical and policy implications of the findings for outdoor educators, schools and policy-makers. It examines the role and values of a place-responsive approach and its potential contribution to the development of the students' 21st century skills, personal and social education, nature education, and education for sustainability. Next, it discusses the viability of this approach in the current outdoor education curriculum in schools. It applies the lessons learned from the two case studies schools to explore the values of this approach and examines how it might be adopted in other secondary schools. A set of design principles based upon the experiences of the teacher-collaborators in the two schools is proposed for this purpose. I examine the usefulness of structuration theory as my theoretical framework, in addition to case study and action research methodology. As part of my reflexivity, I also reflect on my research journey and its influence upon my own beliefs and practice as an outdoor educator and policy-maker. Lastly, I highlight the potential future research that could be conducted in this area.

Implications of findings

The findings of this study have shed light on the theoretical, practical and policy implications for the building of knowledge, practices and policy-making in outdoor education in Singapore schools. In this section, I present the findings supported by key literature to highlight the implications for:

- i. Pedagogical knowledge acquisition,
- ii. dominant thinking and practice of adventure-based programming,
- iii. changes of knowledge, beliefs and practices,
- iv. gaps in knowledge of place-based learning,
- v. professional development and training of outdoor educators,
- vi. enablers and barriers to the adoption of alternative pedagogies,
- vii. the positioning of outdoor education within the PE curriculum and profession.

I. Pedagogical knowledge acquisition

The knowledge acquisition of the teacher-collaborators was derived through a combination of past personal experiences in the outdoors, formal and informal training in outdoor education and the enculturation process of modelling the practices of peers both locally and overseas. An influential factor is the enculturation process. The beginner teachers tended to adopt the practice of their senior and more experienced colleagues implying that role-modelling and mentorship can play an essential role in shaping their knowledge, beliefs and practices. For sustainable practice, Boyes (2012) suggests that effective role-modelling of sustainable behaviour or mentoring to embed practice by outdoor educators or through outdoor experiences may be key to improving understanding and to examine philosophies. Citing past research studies, Jackson (2005) also maintains that “observing how others behave and modelling our behaviour on what we see around us provide more effective and promising avenues for changing behaviours than information and awareness campaigns” (p. xi).

However, it is acknowledged that not all role modelling is good as there are both positive and negative role models in all situations (Prince, 2017). Hence, there is also the risk of teachers adopting the practice of their 'more experienced' colleagues blindly without critical examination. This is demonstrated in this study where the practice of the more experienced teacher-collaborators was based predominantly on the concepts of adventure-based programming in decontextualised situations without any critical reviews prior to the adoption of the place-responsive pedagogy. This implies the need for schools and MOE to provide more structural support such as formal training and continual professional development of teachers on other sustainable pedagogies.

II. Dominant thinking and practice of adventure-based programming

The teacher-collaborators in both case study schools saw the role of outdoor education as developing the students' activity skills, personal and social skills, 21st century competencies including thinking, communication, collaboration and management skills, values education and environmental education. However, whilst they believe in the need to include environmental education, there is a rhetoric-reality gap - there is little or no representation of such in their programmes and practices. An examination of their programmes prior to the introduction of the place-responsive pedagogy revealed that the dominant outdoor education approach was for personal and social development of the students. The teacher-collaborators spoke about its role to build resilience, 'character', social-emotional and 21st century competencies, and values in their students. This is similar to the findings of Atencio et al. (2015), Atencio and Tan (2016), and Y. S. M. Tan and Atencio (2016) on pre- and in-service Singaporean PE teachers. The teachers in their studies commonly stated that outdoor education could provide opportunities for students to learn personal values and build life-skills and character. The participants also held beliefs about the transferability of learning to everyday life. This is despite the notion that students' positive learning experiences being transferable from one situation to another has been heavily debated (see for example: Brookes, 2003b, 2003c; Brown, 2010).

In this study, the findings from phase one validated the dominant conceptions of outdoor education practice locally such as the need to teach survival skills, challenge and push students ‘outside their comfort zone’ through the use of adventure activities involving risk-taking. It echoes the findings by Atencio et al. (2015) on 120 pre-service Singaporean PE teachers that their beliefs and understandings regarding the perceived role of outdoor education provision revolved “within de-contextualised ‘camp’ contexts, replete with ropes course, climbing walls, and team-building activities” (p. 37). Likewise, Atencio and Tan (2016) also found in their study that the pre- and in-service PE teachers often conceptualised outdoor education within an adventure context with adventure activities such as high ropes course commonly mentioned together with the need to teach survival skills. These teachers also perceived the need to place their students in the ‘unfamiliar’ and move them ‘out of comfort zones’.

This practice that places an emphasis on risk and challenge in outdoor environments can be traced back to the imperial and militaristic antecedents that influenced early theorists and practitioners in North America, UK, and Australia (Loynes, 2002; Lugg, 2004; Nicol, 2002a, 2002b). Modern outdoor education practices are focussed on certain outdoor activities and emphasised the human or anthropocentric benefits of personal and social development (Payne & Wattchow, 2008). Brookes (2002) also suggests that outdoor education programmes have largely been defined by risk rather than educational narratives. Zink (2003) further argues that the focus on adventurous pursuits, based on balancing risk with competence to achieve a ‘peak experience’, has privileged certain ways of thinking about outdoor education. Similarly, in the context of Singapore schools, Y. S. M. Tan and Atencio (2016) raise concerns over the competing visions on outdoor education provision in terms of its outcomes and processes. They argue that the dichotomy existed with conceptualising it in terms of adventure-based pursuits. Brown and Beames (2016) and Beames and Brown (2016) argue that outdoor adventure education has become too prescriptive and inflexible to be educational in light of a rapidly changing and complex world. They contend that it is deficient in its capacity to provide students with the skills and attributes needed in 21st century society. Nicol (2010) warns that teachers can be fearful and reticent when they believe that they must be highly qualified to teach outdoor adventure activities occurring in remote environments

away from schools. This could well be the main reason many Singapore schools have resorted to contracting specialist providers with technical expertise to conduct such activities contributing to the lack of agency of the teachers as the design and implementation of the programmes are left mostly to these service providers.

The rhetoric-reality gap in the practice of environmental education could be attributed to the lack of knowledge and understanding of other pedagogies with the dominance of adventure programming pedagogy. The scarcity of professional development and training in other pedagogies is a contributing factor. I will discuss this further in the subsequent section. A policy implication of this finding is the potential need for the MOE to look into formal outdoor education training for pre-service PE teachers with its introduction in the PE curriculum in schools. There is also a need to re-examine the continual training and professional development of in-service PE teachers to include other outdoor education pedagogies. A review of policy on the trends of schools increasingly employing private service providers for their residential camp is also needed. Cooper (2015) warns that the growth of private service providers has “led to the packaging of adventure activities where the emphasis is on fun, thrills and physical experiences and learning become secondary or incidental” (p. 399). He views these as being at odds with most of the originating principles of outdoor education which were based on exploration, nature, community, cooperation and reflection. The role of the teachers in such outsourced programmes should be reviewed to prevent transferring responsibility of students’ learning wholly to service providers.

III. Changes in knowledge, beliefs and practices of teacher-collaborators

The adoption of the place-responsive approach has resulted in a change in the teacher-collaborators’ conception of outdoor education, as comprising mainly outdoor adventure activities. They realised that there are other pedagogies that could be integrated into the outdoor education programme to achieve the desired learning outcomes for their students. There were also several examples of new or modified practices from the teacher-collaborators following the adoption of the place-responsive approach. For instance, Hwei talked about her change in belief that this approach could be practiced by any interested teacher since the focus need not be on adventure-based activities requiring technical skills. Wai spoke about his

change of knowledge, beliefs, and practices by including aspects of place-responsiveness in both his professional and personal life. He utilised his new knowledge of a place-responsive approach to explore various teaching and learning strategies in other programmes besides PE to raise his students' awareness and connection to the environment.

Beyond the necessary structural support from school leadership and availability of resources, lasting change in practice require teachers to modify their attitudes, beliefs, and values priorities. However, it must be noted that substantive change in teachers' pedagogical practice is difficult (Timperley, Wilson, Barrar, & Fung, 2007). For effective pedagogical change, the existing structures need to be altered and the practice routinised over time. However, as pointed out by J. Yates (1997), even in the presence of well-established routines, the individual maintains the conscious and unconscious, intentional and unintentional ability to act in ways that either sustain or modify routines. For a change in behavioural routines to occur, modifications of intention and/or motivation as well as value priorities, attitudes and beliefs are required. In the BSS case, the structure is altered when a community of practice is set up and weekly official time is allotted for discussions for the team of teacher-collaborators. These regular sessions enabled the team to discuss the various issues related to the adoption of a place-responsive approach. These sessions motivated and supported the team members in effecting the pedagogical change and played a positive role in changing their values and beliefs. In the CSS case, the staff developing the value proposition, beliefs, and commitment of the various subjects in the place-responsive approach helped to ensure that the change is sustainable over time. Structural support is provided by the school leaders for the project by including it as a regular agenda item in their weekly management team meeting to allocate resources for the implementation.

IV. Gaps in knowledge of place-based learning

Recent change in the PE syllabus to include place-based learning in outdoor education with the introduction of a sense of place as a strand has posed some challenges for PE teachers. The teacher-collaborators in this study shared that they had little or no prior knowledge of the concept of place-based learning and how it

could be incorporated into their outdoor education curriculum. This finding is in congruence to those by Atencio et al. (2014), Atencio et al. (2015), Atencio and Tan (2016), and Y. S. M. Tan and Atencio (2016). For instance, Y. S. M. Tan and Atencio (2016) found that the pre-service and in-service Singaporean PE teachers lacked a strong understanding of putting place-based pedagogy into practice. Currently, the only available training on the outdoor education in PE curriculum is a one-day workshop conducted by the MOE. As such, Y. S. M. Tan and Atencio (2016) suggest that the lack of understanding of this pedagogy constitutes a professional development and teacher training issue.

The gap in knowledge and understanding of place-based pedagogy is the main reason why all the teacher-collaborators viewed the professional development workshop conducted during the research project to be beneficial. They also identified the collaborative research process of designing and implementing the pedagogy as useful in gaining a deeper understanding of the subject. The policy implication of these findings highlight the need to invest in professional development and continual training of the PE teachers in place-responsive and other sustainable pedagogies.

V. Professional development and training of outdoor educators

From the literature presented in this study, it is clear that outdoor education in Singapore is gaining more attention and is undergoing a major transformation. The roll out of the various initiatives such as the National Outdoor Education Masterplan, Programme for Active Learning (PAL), Learning for Life Programme (LLP), and the introduction of outdoor education in the PE curriculum have cast the spotlight on its function. Whilst outdoor education is identified as playing a pivotal role in the broader and holistic education of Singaporean students especially in the development of the traits and competencies needed for the 21st Century, there are also some curricular and pedagogical challenges. Ho et al. (2015) assert that pre-service teacher training in outdoor education is one of the most pressing challenges. The lack of understanding of outdoor education and the teachers' low levels of readiness to teach the area was attributed to the void in teacher training. Similarly, Atencio et al. (2014) found in their study of the PAL that primary school teachers

are often unprepared to develop and guide outdoor education lessons on their own. Martin and Ho (2009) also found that only one-third of the teachers in their study felt that they had the expertise and knowledge to engage their students with activities in outdoor education. Additionally, besides the lack of pre-service teacher training, the current training and professional development available for in-service teachers is in a dire state. The few available training courses offered focus mainly on instructions in adventure activities and safety management of students.

All the teacher-collaborators who participated in the professional development workshop during the research project found it effective in enhancing their knowledge and understanding of place-responsive pedagogy. They were able to apply some of the theoretical aspects of the pedagogy they learnt in the workshop in their subsequent practice. However, Timperley et al. (2007) posit that participation in one-off workshops rarely changes teachers' practice significantly. They contend that for a change in practice to be effective and long-lasting, it needs to take place over an extended period of time. The quality use of time in the professional development workshops is also a factor. In this aspect, the communities of practice set up in the two schools whereby the teachers meet weekly for discussion and reviews of the teaching strategies is a contributory factor to the effective change in their practice of place-responsive pedagogy. The research process through the sharing of relevant readings, 'brainstorming' meetings where ideas were exchanged, and explorations of the local places and community helped the two schools to develop and implement innovative programmes contextualised to their school cultures.

VI. Enablers and barriers to more sustainable outdoor education approaches

This study also found that school culture and leadership influenced the beliefs and practices of the teacher-collaborators. The strong support of the school leadership has a significant influence in the schools having a culture of integrating outdoor experiential learning within the subject-disciplines. According to Fullan (2007), the school leader is critical to educational change. He posits that the principal is in the most influential position to shape the original conditions necessary for a programme change. General support of school administration for a new programme by itself

has little influence on change in practice unless demonstrated through actions. In this regard, the two school leaders have displayed an active interest in the adoption of the place-responsive pedagogy. They helped the teams canvass for support in the school management and provided them with the necessary resources to implement the programmes. The BSS principal has even gone the extra mile to join the students on the last day of the camp to hike back to the school to demonstrate her support and commitment.

VII. Positioning of outdoor education in the PE curriculum

PE teachers in Singapore are positioned as institutional actors and change agents under a raft of significant educational reforms occurring in the nation (Y. S. M. Tan & Atencio, 2016). The responsibility for designing and implementing the outdoor education programmes in most schools tends to reside with the PE department. The PE teachers are expected to teach outdoor education though they do not have formal and specialised training in this area. There are issues and implications of positioning outdoor education within the purview of PE teachers in Singapore schools. As noted by Backman (2015) the most common and widespread position for outdoor education is within the subject of physical education. Besides Singapore (Ho et al., 2015), countries adopting this practice include the UK (Cooper, 2000), Australia (Gray & Martin, 2012), Canada (Cousineau, 1989), New Zealand (Boyes, 2012), and Sweden (Backman, 2011).

The MOE and most school leaders adopt the position that the PE profession is most suited to enact the outdoor education curriculum and programmes in schools. Ho et al. (2015) note that “OE’s role in the context of the Singaporean education system was judiciously conceptualised as serving physical and sports education” (p. 278). Moreover, most of the outdoor education programmes, camps and adventure trips are led by PE-trained teachers. The perception that PE teachers are more suited to teach outdoor education has influenced the teaching profession significantly. As shown in the findings of this study, both the PE and non-PE teacher-collaborators believed that the PE teachers are better suited to deliver the outdoor education programmes in schools.

However, this positioning of outdoor education within the PE profession poses several challenges. First, it assumes that all PE teachers are competent to deliver the outdoor education programmes despite the lack of formal training during their pre-service teacher education. Second, it reinforces the conception of outdoor education as merely a physical endeavour. Thirdly, it potentially deprives interested non-PE teachers of the opportunity to teach outdoor education. Hence, positioning outdoor education within the purview of the physical education profession is problematic as this limits its development. As demonstrated in this study, place-responsive pedagogy could also be enacted by non-PE teachers as it does not focus solely on education for physical health and well-being. In light of these findings, I argue for a recalibration of outdoor education practice in Singapore. This will be discussed in the subsequent section.

Place-responsive pedagogy as a sustainable approach

This section explores the values of a place-responsive pedagogy as a complementary and sustainable approach to the practice of outdoor education based on the findings from this research project. It proposes some conceptual design principles derived from the collective experiences of the teacher-collaborators that could be applied by potential schools interested in adopting this approach.

Values of a place-responsive pedagogy

This study sought to offer an alternative approach to the current dominant conception of outdoor education. This was achieved by working collaboratively with the teacher-collaborators in the two schools to critically examine their current outdoor education programmes and practice and to reconceptualise them. The project moved beyond the dominant discourses of adventure activities, skill performance, risk taking and management, and pushing students out of their comfort zone (Brookes, 2003b, 2003c; Brown, 2008a, 2009; Brown & Fraser, 2009; Lugg, 2004; Nicol, 2002b; Zink & Burrows, 2008).

The findings from the BSS case study revealed the potential values of a place-responsive approach for the development of student agency, enhanced teacher

agency, fostering of teacher-to-student and student-to-student relationships. The BSS team welcomed the opportunity provided in this approach in giving the students more agency to self-direct their learning through their own planning and delivery of the camp. The approach adopted also required more active involvement of the teachers and enhanced their control (agency) over how the camp could be run compared to a service-provider. This resulted in closer relationship building between the teacher-collaborators and their students and amongst the students. The teacher-collaborators also espoused their views that the place-responsive approach had broadened their beliefs and practice of outdoor education. Similarly, the findings of the CSS study showed the values of a place-responsive approach in creating authenticity in the project work segment to enhance student learning, and the opportunities provided in building resilience and relationships between students and teachers in an overseas adventure camp. The teacher-collaborators witnessed the benefits of a place-responsive approach in developing the global awareness of students on cross-cultural, community and place-related issues. They found it relatively easy to become a place-responsive outdoor educator compared to an outdoor adventure educator where technical skills in teaching outdoor adventure activities are needed. They recognised it as a viable approach that could be integrated with their current adventure-based programming practice to deliver the desired learning outcomes for students. Whilst they acknowledged the additional effort needed to be familiar with the places through research and repeated visits, they felt that this approach made the teaching of outdoor education more accessible to those teachers who are less inclined towards teaching technical outdoor skills.

Thorburn and Allison (2010, p. 100) believe that outdoor education is “beneficial in helping the students to explore their own values, preferences and histories and to make decisions about how they want to live their lives”, providing a more complete engagement when an experiential philosophy of learning is adopted. By this, they contend that getting the students to “identify issues, topics, problems and challenges in which they are interested, and which are then used as the context for trying solutions, reflecting on their success and progressively engaging in an upward spiral of engaged learning” (Thorburn & Allison, 2010, p. 99) is a key aspect of outdoor experiential learning. The present study contributes to research on student-centric learning and student active engagement through the adoption of a place-responsive

approach. It contends that the current Singaporean practice of outdoor education programming with the predominant use of artificially constructed adventure learning elements such as the ropes course, abseiling, climbing, and caving poses greater limitations with regards to the exertion of students' agency and autonomy. The findings of this study showed that for the two case study schools, a place-responsive approach provides more opportunities for authentic and student-centred learning by getting students to immerse themselves in the learning of the place and community where they can identify the issues and challenges and propose solutions for them. Beames and Atencio (2008) suggest that a place-based approach can lead to social capital generation within the learning groups, school and the community.

Mannion and Lynch (2016) note that whilst place has emerged in recent years as a core concern across all disciplines, it remains less well connected to the literature on outdoor education. The present study contributes to the development of both theory and practice in place-responsive outdoor learning. It theorises the development of a greener practice of outdoor adventure education by integrating place-responsive approaches with adventure-based pursuits. A value of a place-responsive approach is that it can provide both teachers and students agency to exert ownership of outdoor learning programmes. The approach also focuses attention on students and place, at the centre of the planning process, rather than on the activities. It requires a rethinking of outdoor education as merely a set of activities for the students to participate in, often taking place in a decontextualised setting. Additionally, it encourages a cross-curricula approach to teaching and learning such as the integration of geography, history, mathematics, science and social studies.

How may a place-responsive outdoor education pedagogy be adopted in other schools?

Based on the experiences of the teacher-collaborators in the two case study schools, some conceptual design principles can be derived in adopting a place-responsive approach. They are:

- a. Empower student agency and autonomy
- b. Employ a self-propelled journey-based programme

- c. Create authentic tasks/assignments related to real world situations
- d. Adopt slow pedagogy – use of the five senses
- e. Use local narratives to connect with the place(s)

These five design principles can serve as a guide for other schools interested in implementing a place-responsive pedagogy in their outdoor education programmes. As they are inter-related, they should be adopted collectively rather than in isolation.

a. Empower student agency and autonomy

A place-responsive pedagogy is place- and student-centric. It provides the room for teachers to empower students with the agency and autonomy to decide on their learning. Both teachers and students are seen as co-learners and co-constructors of learning.

b. Employ self-propelled journey-based programmes

Prince (2017) contends that journeying is a key part of outdoor education and reducing a carbon footprint can be easily achieved by self-propelling means like canoe, kayak or on foot. Besides the opportunities presented by a journey-based programme for students to plan and exercise responsibility and decision-making skills, it also has the potential to create serendipitous learning. Wai provided a good account of such incidental learning during his class expedition to the Bukit Timah Nature Reserve where he leveraged on his student's interest in a fleet of vintage cars to enable them to learn more of the place and community (see Chapter Eight). This learning episode has created a potentially impactful and unforgettable experience for the students.

c. Create authentic tasks/assignments

The experiences of the teacher-collaborators in both case study schools showed that the creation of authentic tasks and assignments related to the place and community can lead to better engagement of the students. They found that not only are the students more responsible in carrying out their tasks, they also put in more effort. In the CSS case, the team reported a surge in the students' interest and effort when the latter realised that their research could yield real and feasible solutions to the

problem and issues inherent in the place they visited.

d. Adopt slow pedagogy – use of the five senses

The teacher-collaborators realised that more time was needed for the students to immerse themselves in the experiences of place(s) during a journey. One useful strategy is the adoption of ‘slow pedagogy’ to enable the students to do this. Varley and Taylor (2014) contend that the benefits of ‘slow’ travel are well documented. Orr (2004) posits that we are living in a culture of fast knowledge which is cut off from its ecological and social context. In order to live within our ecological limits, he proposes the need for us to embrace ‘slow knowledge’ with its aim of “resilience, harmony and preservation of patterns that connect” (p. 38). Piersol (2014) suggests that to do this, it requires one to listen more attentively. This, in turn, requires a considerable amount of time to be spent in a place. She likens it to having a sense of ‘glacial time’ where one often thinks of “all the rivers and glaciers grinding and scouring the mountains away sweeping the grit and silt” (p. 49). Thus, the longer the time the individuals are able to spend in a place, the more they can feel their belonging and develop a sense of place. By ‘listening in place’, Piersol (2014) contends that it is not just using the ears but all the other senses as well, to be place-conscious.

e. Use local narratives

Local stories and narratives of places and people can be an effective tool in developing place-responsiveness. Hwei recalled her and her students’ excitement when one of their classmate narrated stories based on his research of Punggol, a place the class journeyed to. For Hwei and many of her students, a fascinating revelation amongst the various interesting stories of Punggol was its location as the first zoo in Singapore. This was an unknown fact to many as the common perception is that the present zoo is the first zoo in Singapore. The narratives had an impact on her learning of the place and helped connect her to it.

Need for recalibration of outdoor education practice in Singapore

One purpose of this study was to explore how deep cultural assumptions influence and interact with conceptions of outdoor education in Singapore secondary schools. It revealed the dominant assumptions of the challenge by choice, role of risk, comfort zone models, transfer of learning and experiential learning models, which are largely central to the thinking and practice of outdoor education. The study highlights the need for a change towards a more sustainable outdoor education practice. To effect this change, Hill (2012) suggests that it needs to take place at three levels: (a) in beliefs, values, and understandings, (b) in infrastructure, resource use, and programming, and (c) in teaching and learning strategies. The first and third levels have been discussed previously in this study.

I will address resource use in the second level as this has implications for sustainable changes in our practice. Policy wise, there is a vital need for the MOE to examine how the structures it has created in terms of the resources, rules and policy with regards to outdoor education may inhibit pedagogical changes. There is a need to review the policies on the utilisation of rules and resources, and programming in the MOE Outdoor Adventure Learning Centres (OALCs). For instance, the government financial and manpower support for the set-up of the second OBS campus at S\$250 million, and the redevelopment of the four MOE OALCs could be better optimised to realise the broader aims of outdoor education. Here, I speak as an insider who is involved in these developmental projects as a Senior Specialist in MOE. The huge budget allotted for the installation of several artificial structures such as the state-of-the-art climbing and abseiling walls, artificial caves, and challenge ropes course may indirectly curtail the development of additional pedagogies other than adventure-based programming. No doubt, there is value in incorporating these forms of adventure-based activities in residential camp settings for beneficial educational outcomes (see for example the meta-analyses on forty-four studies in challenge course by Gillis and Speelman (2008)). But the relative short duration of school camps (typically between two and three days) has resulted in the students spending most of their camp within the residential centres engaging in such adventure-based activities at the expense of other nature-based programme. The installation of more such facilities in these Centres created

a chicken-and-egg situation whereby both the owners and schools are compelled to include activities utilising these facilities. Such activities become routinised over time and are regarded as the predominant 'essential' practice.

The success of the two case study schools in adopting a place-responsive pedagogy in their camp programme utilising urban and green spaces, nature parks, and heritage places has several positive outcomes. First, it demonstrates that engagement with local places and community through interaction with people and the environment can create authentic and real-life experiences for the students. Second, a place-responsive approach enables more bonding time for the students with their peers and teachers, unlike centre-based activities such as challenge ropes course and wall climbing where the focus of the students tend to be on the activities. Third, a place-responsive and journey-based approach can provide more opportunities for students' agency, autonomy and decision-making as opposed to centre-based adventure activities which are mostly instructor-led due to the risks involved.

The findings of this study highlight the need for MOE and the government to examine critically where and how their investment, in terms financial and human resources, should be used in the implementation of the National Outdoor Education Masterplan. Structures in terms of the rules and resources exert a strong influence on the agency of the change agents (teachers and school leaders). I argue that excessive investment in adventure facilities within residential outdoor learning centres can do more harm than good. Instead of investing heavily in artificial structures within the residential campsites, the authority should explore and tap on more free and sustainable resources such as the use of local natural and urban areas. These resources include green spaces, park, nature reserves, community and heritage sites which are readily available. The financial resources saved from building expensive adventure facilities could be channelled instead to provide the schools with the means to bring their students out to these local places. They could also be invested in more professional development and continual training of outdoor educators in sustainable pedagogies and in creating innovative and sustainable programmes.

Several local studies (see for example: Atencio & Tan, 2016; Atencio et al., 2015; Ho, 2013; Martin & Ho, 2009; Y. S. M. Tan & Atencio, 2016) have also argued for outdoor education to serve wider agendas other than building resilience, emotional bonding with the country and critical thinking to include ecological literacy and place-based learning. The findings of this study highlighted the critical need for a recalibration of current provision of outdoor education towards a more contextualised practice rooted in real world situations and place.

Reflections on the Theoretical Framework and Methodology

Initially, this section critically reflects on the usefulness of structuration theory as a theoretical framework to guide the data analysis and interpretation. This is followed by consideration of the efficacy of the case study and action research methodologies of the project.

Reflections on the use of Structuration Theory as a Theoretical Framework

In Chapter Two I presented Giddens' (1979, 1984) structuration theory as a theoretical framework for the analysis and interpretation of data collected during the research project. Like BurrIDGE et al. (2010), Cassidy (2000), Cassidy and Tinning (2004), Dinah-Thompson (2001), Edwards (2013), and Stones (2005), for example, I believe that the notion of a duality of structure in structuration theory can aid in understanding social processes, practices and relations. In this case, it has been very useful to explore and understand how the beliefs and practices of the teacher-collaborators shape and are shaped by structural factors such as the school culture, rules and resources. The theory proposes that these structures combine to produce human actions or social practice (Beedie, 2013). In this research project, the school culture, leadership team, rules and resources shape the actions (practices) of the teacher-collaborators in effecting pedagogical change. These structures allow people such as the school leadership and management team (who have greater access to the resources) to control the behaviour of the teacher-collaborators. They also impact on the teacher-collaborators' beliefs and practices. The successful adoption of a place-responsive pedagogy is dependent upon the teacher-collaborators' beliefs about their self, beliefs about the rules and resources of the school setting (enabling or disabling), as well as beliefs about the beliefs of their

colleagues. The findings from both the BSS and CSS case studies suggested that structural elements such as the pro-outdoor learning school culture, enabling rules and resources, and role-modelling of colleagues positively impact the knowledge, beliefs and practices of the teacher-collaborators in outdoor education. The interrelated human and structural elements of a school environment not only influenced the outdoor education practices of the two schools, but were in turn influenced and shaped by these practices as well.

The notion of the duality of structure and agency suggests that not only would the school leadership teams and teachers' values and beliefs influence the manner in which they implement the place-responsive programme, their interaction with it would, in turn, influence their beliefs and values as well. The findings from the study reinforce the theory on the duality of structure that power is not absolute. For instance, the principal who has greater power due to easy access to both authoritative and allocative resources could exercise it to influence the level of participation of the teacher-collaborators in the project. However, the teacher-collaborators with their knowledge and understanding of the place-responsive pedagogy may also influence the principal's belief about the pedagogical change and subsequent decisions on the implementation process.

Structuration theory was also useful in analysing and interpreting the data collected from the study. For instance, it helps to explain the dominant adventure programming pedagogy in the two case study schools. The structure created in terms of the MOE's policy on adventure-based camping (rules) and the easy access to challenge ropes course, climbing walls, artificial caving system and zipline (allocative resources) reinforced the school and teacher-collaborators' belief and behaviours on outdoor education as comprising mainly adventure programming. This practice becomes customary over time and is used to induct the beginning outdoor educators in the schools. However, as the duality of structure implies, this habitual practice can also be altered by changing the pedagogical approach through the adoption of a place-responsive pedagogy in this case. The findings found a change in beliefs and practices of the teacher-collaborators in both BSS and CSS. This change in practice could become customary over a period of time and recreate the structural elements that shaped it initially.

Reflections on Methodology – Case study and participatory action research

The employment of the case study methodology as the main strategy of inquiry has enabled me to examine two different schools with distinctive outdoor education curricula. The case study methodology also facilitated the use of the various data generation methods such as participation in professional development workshops, sharing sessions, and field observation, each chosen for its ability to provide insights into the various aspects of the Structuration theory. For example, participation in the professional development workshop and sharing sessions provided insights into the rules and policies (structured sets), educational aims (structured principles) and the school hierarchical systems (structure) that influenced the teacher-collaborators' design and implementation of the place-responsive approach. The interviews and focus group discussions were valuable for encapsulating the teacher-collaborators' perceptions of their experience in designing and implementing the approach. These interviews and focus groups provided insights into the relationship between structure and agency in the teachers' work environments, particularly in relation to their ontological security, unconscious motives, practical consciousness and discursive consciousness. The interviews and focus group discussions also highlighted aspects of both implicit and explicit rules and resources (structures) as factors influencing the practice of the teacher-collaborators. They revealed the critical aspects of the social systems of interaction and structured principles directing the teacher-collaborators' perceptions of their actions.

Some aspects of the participatory action research cycle of plan, review and act were also incorporated as part of the collaborative nature of the study. The interpretivist approach adopted in the research process acknowledged that knowledge is socially constructed by all the participants. It recognised the multiple influences that both the teacher-collaborators and the researcher have on each other as we sought to deepen our understanding and practice of a place-responsive pedagogy. The employment of the action research cycle enabled us to work collectively to influence, share, act and review our ideas. Throughout phase two of the research project, I provided professional learning and development opportunities for the

teacher-collaborators. This was done through meetings and sharing sessions in the school and circulation of relevant articles on place-based learning. These sessions have enabled us to share and learn from each other and enriched our understanding and practises of place-responsive pedagogy.

Reflections on the Research Project

Giddens views reflexivity as the individuals' and institutions' regular and constant use of knowledge for society's organisation and change. Freire (1972) also asserts that action and reflection are necessary to bring about meaningful change. In line with these views, I reflected upon my journey as a beginner researcher and practitioner in this research study. The study also enabled me to reflect on my role as part of the outdoor education policy and curriculum-making and implementation team in the MOE. It has allowed me to witness first-hand the policy intent and implementation gaps in the two schools. I understand now the challenge outdoor educators face in terms of their readiness with the recent policy and curriculum changes. There is a need for me as a curriculum specialist to work closely with schools and teachers as co-constructors of curricula change before implementation. Professional development and training are also essential to prepare teachers for the enactment of the new curriculum.

Throughout the research process, I acknowledge the power-relations that existed between the teacher-collaborators and myself as researcher though I have attempted to minimise any potential negative effects of it. I was cognisant of the fact that I would be viewed as someone from the outdoor education unit in the MOE involved in its policy-making and implementation. Directly or indirectly, this may have constrained more diverse pedagogical approaches by the teacher-collaborators. Though unintentional, they may also have been pressured to conform within the research group during the project. I was very aware of my own value-laden subjectivity and influence that I brought to the research process. This is reflected in the way I facilitated the professional development and sharing sessions for the teacher-collaborators which were filtered through my own values and subjectivity. However, I communicated this to them during the research process and reminded them to adopt a critical and reflective stance when participating in the workshop

sessions, discussions, and reading the place-based learning materials I have circulated. These sessions were conducted in an open way to encourage frank and open dialogue and allow members to critique both the processes and the materials produced.

The adoption of the participatory action research methodology posed some challenges. At times, I experienced a tension between my aim to meet the reciprocal and collaborative intent of action research with getting the teacher-collaborators to critique their existing outdoor education pedagogies and practices. I felt it especially challenging to get the teacher-collaborators to critically reflect on the influence of cultural assumptions on the current outdoor education beliefs and practices. I sensed a reluctance by some of them to challenge and change the predominant beliefs and conceptions of outdoor education. This was especially so in the CSS case. Whilst the two non-PE teacher-collaborators showed their commitment by initiating a transformational change in their project work segment of their outdoor education programme, the other two PE teacher-collaborators were content to make incremental changes to the adventure-based segment to include elements of place-responsive learning instead. Due to their busy work schedule, I was only able to hold a few face-to-face discussions and sharing sessions with the PE teacher-collaborators. The other discussions were held via emails which posed a limitation to the in-depth sharing and review of their programme and practice.

Implications for Future Research

As we move closer to the end of the second decade of the 21st century, it has become increasingly clear that the practice of outdoor education in Singapore cannot maintain its status quo. This is because we are living in a rapidly changing world marked with increasing social inequalities, threat of climate change, growing human population, depleting natural resources and escalating environmental degradation. These inter-related global issues compel a response by all aspects of society, including outdoor education. Outdoor educators need to play a part to address these issues through enacting sustainable and green practices. Hence, this study sets out to explore a change in pedagogical approach in outdoor education practice via a place-responsive pedagogy in order to educate for a more sustainable

future. It has provided both the theoretical and practical application of what a green outdoor education practice can look like. Whilst place-based and place-responsive approaches to outdoor learning are developing in many countries (J. Lynch & Mannion, 2016), there is “little empirical research into place-responsive forms of practice in outdoor studies” according to Brown and Wattchow (2015, p. 438). This study attempts to bridge this gap and contribute to the research of a place-responsive pedagogy.

Whilst this research project is the first to provide both theoretical and practical applications of a place-responsive outdoor education pedagogy in Singapore schools, some gaps and constraints have emerged in the study which could be addressed in future studies. First, an examination of both students’ and teachers’ perspectives of place-based pedagogy and its impact on their attitudes, behavior and decision-making towards sustainability would be useful. Second, as reiterated by Beames et al. (2011), large group size can be a significant barrier to the development and implementation of an appropriate outdoor education curriculum. The efficacy on learning outcomes due to a large group size (typically between 20 and 40 students) in school camps could be studied. Third, there are some identified constraints to incorporating a more sustainable outdoor education practice through place-based approaches. These included the institutional structures (institution, resources), teacher and student agency, assessment culture, and policies which warrant further research in these aspects. Fourth, there is a need for further research on other sustainable pedagogies in outdoor education given the dominant use of adventure programming approach in Singapore schools. Lastly, research in the integration of alternative pedagogies such as ecological literacy, place-based and nature-based education with existing outdoor adventure programming approach will aid outdoor educators to educate for sustainability.

Concluding Comments

Outdoor educators in Singapore are uniquely positioned to lead pedagogical and innovative changes in outdoor education. This is because there is strong and continual governmental support and funding available for schools to enact their outdoor education curriculum. This support is shown in the government’s recent

creation of the National Outdoor Education Masterplan. Moreover, current policy initiatives towards more holistic learning for Singapore students has resulted in a bigger role for outdoor education in the Singapore education system. It recognises the vital role outdoor education can play in providing students with broad based educational experiences (Atencio et al., 2014).

Whilst the main purpose of the strong government investment is to develop a rugged and resilient citizenry, I contend that this provides opportunities for Singapore outdoor educators to go beyond these governmental aims to also educate for place and sustainability. The government's focus on the use of outdoor education for the development of resilient individuals need not be at the expense of a place-responsive learning and education for sustainability. Both can be enacted hand-in-hand with innovative pedagogical changes. The experiences of the teacher-collaborators in the two case study schools provided a good testimony of this. This study has shown how outdoor educators can marry both outdoor adventure and place-responsive pedagogies to create authentic learning experiences for students rooted in real world situations. It has also shown that the place-responsive approach could be an effective pedagogy to meet the MOE's initiative towards a student-centric, values-driven education. The approach provides ample opportunities through interaction and connection to place, people and community for a student to develop the 21st century competencies and the desired learning outcomes of being a confident person, self-directed learner, concerned citizen and active contributor. More importantly, this is a sustainable approach which will enable students to learn, connect and respond to their place(s) and engage in the issues surrounding their places and communities. A place-responsive approach can enable our students to use their experiences of place(s) to understand both the human and more than human world and improve the human-environment relation (J. Lynch & Mannion, 2016).

Orr (2004) highlights the danger in conventional wisdom that regards all education as good and warns that "without significant precautions, education can equip people merely to be more effective vandals of the earth" (p. 5). It is timely for Singapore outdoor educators to critically re-examine our current practice to avoid the increasing risk of our students becoming vandals of our precious planet. It is not the

aim of this study to discard traditional ways of practice as some of them are still relevant to students' learning in the current contexts. Instead, I support the contention of Wattchow and Higgins (2013) that:

It is not necessary that the tradition be abandoned. Rather, it is better that it be acknowledged, the best of it taken forward, and the rest replaced with beliefs, values and practices that are more responsive to contemporary social and ecological imperatives (p. 186).

This study has proposed an alternative place-responsive pedagogy in place of the dominant adventure education programming in Singapore schools. Moreover, the findings from the two case studies suggest that a place-responsive approach can be an inclusive pedagogy that could complement existing pedagogies (for example, adventure-based programming and experiential learning) for a more balanced and sustainable outdoor education curriculum. This approach through learning and responding to place(s) can not only lead to the acquisition of knowledge about the land, its use and history, but also facilitate the development of values such as sustainability, aesthetic appreciation and respect for the outdoors. With pressing global issues such as climate change, increasing degradation and depletion of the natural environment and resources, and the unsustainable culture of consumerism, I argue that outdoor education in Singapore schools cannot continue to focus mainly on skills, and personal and social development. Essentially, a place-responsive approach with its ultimate aim of education for sustainability may be a way forward for outdoor education to remain relevant to the education of our young for a better and sustainable future.

References

- Agnew, J. A., & Duncan, J. S. (1989). Introduction. In J. A. Agnew & J. S. Duncan (Eds.), *The power of place: Bringing together geographical and sociological imaginations* (pp. 1-8). Boston: Unwin Hyman.
- Allison, P., Carr, D., & Meldrum, G. (2012). Potential for excellence: interdisciplinary learning outdoors as a moral enterprise. *The Curriculum Journal*, 23(1), 43-58. doi:10.1080/09585176.2012.650469
- Allison, P., & Telford, J. (2005). Turbulent times: outdoor education in Great Britain 1993-2003. *Australian Journal of Outdoor Education*, 9(2), 21-30.
- Almenoar, M. (2005a, 28 October). Adventure trips popular with students. *The Straits Times*, p. 23.
- Almenoar, M. (2005b, 20 December). Rough it out abroad education. *The Straits Times*, p. 3.
- Angen, M. J. (2000). Evaluating interpretive inquiry: Reviewing the validity debate and opening the dialogue. *Qualitative Health Research*, 10(3), 378-395. doi:10.1177/104973230001000308
- Archer, M. S. (1995). *Realist social theory: The morphogenetic approach*. Cambridge: UK: Cambridge University Press.
- Archer, M. S. (1996). Social integration and system integration: Developing the distinction *Sociology*, 30(4), 679-699.
- Archer, M. S. (2000). *Being human: The problem of agency*. Cambridge, U.K.: Cambridge University Press.
- Archer, M. S. (2010 [1982]). Morphogenesis versus structuration: On combining structure and action – The BJS: Shaping sociology over 60 Years [Originally published in 1982 *British Journal of Sociology* 33(4): 455–83.]. *The British Journal of Sociology*, 225-252.
- Arenas, A. (1999). *If we all go global, what happens to the local? In defense of a pedagogy of place*. Paper presented at the Annual Meeting of the Comparative & International Education Society, Toronto, Canada.
- Arts, B. A. S. (2000). Regimes, non-state actors and the state system. *European Journal of International Relations*, 6(4), 513-542.

- Asfeldt, M., & Beames, S. (2017). Trusting the Journey. *Journal of Experiential Education*, 40(1), 72-86. doi:10.1177/1053825916676101
- Ashley, L. D. (2017). Case study research. In R. Coe, M. Waring, L. V. Hedges, & J. Arthur (Eds.), *Research Methods and Methodologies in Education* (2nd ed., pp. 114-121). London: Sage.
- Ashraf, J., & Uddin, S. (2015). Management accounting research and structuration theory: A critical realist critique. *Journal of Critical Realism*, 14(5), 485-507. doi:10.1179/1476743015Z.00000000079
- Atencio, M., & Tan, Y. S. M. (2016). Teacher deliberation within the context of Singaporean curricular change: pre- and in-service PE teachers' perceptions of outdoor education. *The Curriculum Journal*, 27(3), 368-386. doi:10.1080/09585176.2015.1127843
- Atencio, M., Tan, Y. S. M., Ho, S., & Chew, T. C. (2014). The place and approach of outdoor learning within a holistic curricular agenda: Development of Singaporean outdoor education practice. *Journal of Adventure Education and Outdoor Learning*, 15(3), 181-192.
- Atencio, M., Tan, Y. S. M., Ho, S., & Chew, T. C. (2015). 'The strawberry generation... they are too pampered'. *European Physical Education Review*, 21(1), 31-50. doi:doi:10.1177/1356336X14550939
- Backman, E. (2015). Teaching trainee teachers about outdoor education. In B. Humberstone, H. Prince, & K. A. Henderson (Eds.), *Routledge International Handbook of Outdoor Studies* (pp. 121-130). London: Routledge.
- Baker, M. (2005). Landfullness in adventure-based programming: Promoting reconnection to the land. *Journal of Experiential Education*, 27(3), 267-276.
- Bakewell, O. (2010). Some reflections on structure and agency in migration theory. *Journal of Ethnic and Migration Studies*, 36(10), 1689-1708. doi:10.1080/1369183X.2010.489382
- Ball, S. J. (1990). *Politics and policy making in education: Explorations in policy sociology*. London: Routledge.
- Barratt, J. & Greenaway, R. (1995). *Why adventure?* Convnetry: Foundtaion for Outdoor Learning.
- Bandura, A. (1998). Self-regulation of motivation and action through goal system. In G. H. Bower & N. H. Frijda (Eds.), *Cognitive perspectives on emotion and motivation* (pp. 37-61). Dordrecht: Martinus Nijhoff.

- Beames, S., & Atencio, M. (2008). Building social capital through outdoor education. *Journal of Adventure Education & Outdoor Learning*, 8(2), 99-112. doi:10.1080/14729670802256868
- Beames, S., & Brown, A. (2005). Outdoor education in Hong Kong: Past, present and future. *Journal of Adventure Education & Outdoor Learning*, 5(1), 69-82. doi:10.1080/14729670585200611
- Beames, S., & Brown, M. (2013). Enough of Ronald and Mickey: Focusing on learning in outdoor education. *Journal of Adventure Education and Outdoor Learning*, 14(2), 118-131. doi:10.1080/14729679.2013.841096
- Beames, S., & Brown, M. (2016). *Adventurous learning: A pedagogy for a changing world*. UK: Routledge.
- Beames, S., Higgins, P., & Nicol, R. (2011). *Learning outside the Classroom: Theory and guidelines for practice*. London:UK: Routledge.
- Beatley, T., & Manning, K. (1997). *The Ecology of Place: Planning for Environment, Economy, and Community*. Washington, USA: Island Press.
- Beedie, P. (1995). Where are the risk takers in outdoor education? A critical analysis of two current perspectives. *Journal of Adventure Education and Outdoor Leadership*, 12(4), 10-13.
- Beedie, P. (2013). Anthony Giddens: Structuration theory and mountaineering. In E. Pike & S. Beames (Eds.), *Outdoor Adventure and Social Theory* (pp. 88-98). London: Routledge.
- Ben-Peretz, M. (1975). The Concept of Curriculum Potential. *Curriculum Theory Network*, 5(2), 151-159. doi:10.1080/00784931.1975.11075803
- Berman, D., & Davis-Berman, J. (2002). An integrated approach to crisis management in wilderness settings. *Journal of Adventure Education & Outdoor Learning*, 2(1), 9-17. doi:10.1080/14729670285200121
- Berman, D., & Davis-Berman, J. (2005). Positive psychology and outdoor education. *Journal of Experiential Education*, 28(1), 17-24.
- Berman, P., & McLaughlin, M. W. (1976). Implementation of educational innovations. *Educational Forum*, XL(3), 345-370.
- Berry, W. (1987). *Home economics*. San Francisco, California: North Point Press.
- Biesta, G., & Tedder, M. (2007). Agency and learning in the lifecourse: Towards an ecological perspective. *Studies in the Education of Adults*, 39, 132-149.

- Blase, J., & Anderson, G. (1995). *The micropolitics of educational leadership: From control to empowerment*. London: Cassell.
- Boucaut, R. (2001). Understanding workplace bullying: A practical application of Giddens' structuration theory. *International Education Journal*, 2(4), 65-73.
- Bowe, R., Ball, S. J., & Gold, A. (1992). *Reforming education and changing schools: Case studies in policy sociology*. London: Routledge.
- Boyes, M. (2012). Historical and contemporary trends in outdoor education. In D. Irwin, J. Straker, & A. Hill (Eds.), *Outdoor education in Aotearoa, New Zealand: A new vision for the twenty first century* (pp. 26-45). Christchurch, N.Z.: CPIT.
- Boyes, M., & O'Hare, D. (2003). Between safety and risk: A model for outdoor adventure decision making. *Journal of Adventure Education & Outdoor Learning*, 3(1), 63-76. doi:10.1080/14729670385200251
- Brookes, A. (2002). Lost in the Australian bush: Outdoor education as curriculum. *Journal of Curriculum Studies*, 34(4), 405-425. doi:10.1080/00220270110101805
- Brookes, A. (2003a). *Character building: why it doesn't happen, why it can't be made to happen, and why the myth of character building is hurting the field of outdoor education*. Paper presented at the Relevance, making it happen : 13th National Outdoor Education Conference proceedings April 14-16 2003, Adelaide, South Australia, Adelaide, Australia. http://www.voea.vic.edu.au/conferences/2003NationalOEConference_Proceedings.pdf
- Brookes, A. (2003b). A critique of neo-Hahnian outdoor education theory. Part one: Challenges to the concept of "character building". *Journal of Adventure Education & Outdoor Learning*, 3(1), 49-62.
- Brookes, A. (2003c). A critique of neo-Hahnian outdoor education theory. Part two: "The fundamental attribution error" in contemporary outdoor education discourse. *Journal of Adventure Education & Outdoor Learning*, 3(2), 119-132. doi:10.1080/14729670385200311
- Brown, M. (2008a). Comfort zone: Model or metaphor? *Australian Journal of Outdoor Education*, 12(1), 3-12.
- Brown, M. (2008b). Outdoor education: Opportunities provided by a place-based approach. *New Zealand Journal of Outdoor Education: Ko Tane Mahuta Pupuke*, 2(3), 7-25.

- Brown, M. (2009). Reconceptualising outdoor adventure education: Activity in search of an appropriate theory. *Australian Journal of Outdoor Education*, 13(2), 3-13.
- Brown, M. (2010). Transfer: Outdoor adventure education's Achilles heel? Changing participation as a viable option. *Australian Journal of Outdoor Education*, 14(1), 13-22.
- Brown, M. (2012a). A changing landscape: Place-responsive pedagogy. In D. Irwin, J. Straker, & A. Hill (Eds.), *Outdoor education in Aotearoa New Zealand: A new vision for the twenty first century* (pp. 104-124). Christchurch: Christchurch Polytechnic Institute of Technology.
- Brown, M. (2012b). Student perspectives of a place-responsive outdoor education programme. *New Zealand Journal of Outdoor Education: Ko Tane Mahuta Pupuke*, 3(1), 64-89.
- Brown, M., & Beames, S. (2016). Adventure education: Redux. *Journal of Adventure Education and Outdoor Learning*, 1-13.
- Brown, M., & Fraser, D. (2009). Re-evaluating risk and exploring educational alternatives. *Journal of Adventure Education & Outdoor Learning*, 9(1), 61-77. doi:10.1080/14729670902789529
- Brown, M., & Wattchow, B. (2015). Enskilment and place-responsiveness in outdoor studies. In B. Humberstone, H. Prince, & K. A. Henderson (Eds.), *Routledge International Handbook of Outdoor Studies* (pp. 435-443). London: Routledge.
- Bryant, C. G. A., & Jary, D. (1991). *Giddens' theory of structuration: A critical appreciation*. London: Routledge.
- Bryman, A. (2004). *The Disneyization of society*. London: Thousand Oaks, Sage Publishers.
- Bryman, A. (2008). *Social research methods* (3rd ed.). New York: Oxford University Press.
- Bunting, C. J. (1999). Have adventure programs eliminated too much risk? In S. Wurdinger & T. Potter (Eds.), *Controversial issues in adventure education*. (pp. 129-135). USA: Kendall Hunt.
- Burridge, P., Carpenter, C., Cherednichenko, B., & Kruger, T. (2010). Investigating praxis inquiry within teacher education using Giddens' structuration theory. *Journal of Experiential Education*, 33(1), 19-37.

- Cachelin, A., Rose, J., Dustin, D., & Shooter, W. (2011). Sustainability in outdoor education: Rethinking roots metaphors. *Journal of Sustainability Education*, 2 (March).
- Cameron, J. (2003). Responding to place in a post-colonial era: An Australian perspective. In W. A. Adams & M. Mulligan (Eds.), *Decolonizing nature: Strategies for conservation in a postcolonial era* (pp. 172-196). UK Earthscan Publications.
- Cameron, J., Mulligan, M., & Wheatley, V. (2004). Building a place-responsive society through inclusive local projects and networks. *Local Environment*, 9(2), 147-161. doi:10.1080/1354983042000199543
- Carson, R. (1965). *The Sense of Wonder*. USA: Harper & Row.
- Casey, E. S. (1997). *The fate of place: A philosophical history*. Berkeley: University of California Press.
- Cassell, P. (1993). *The Giddens reader*. London: MacMillan Press.
- Cassidy, T. (2000). *Investigating the pedagogical process in physical education teacher education*. (Unpublished doctoral thesis), Deakin University, Australia.
- Cassidy, T., & Tinning, R. (2004). "Slippage" is not a dirty word: considering the usefulness of Giddens' notion of knowledgeability in understanding the possibilities for teacher education. *Teaching Education*, 15(2), 175-188. doi:10.1080/1047621042000213601
- Chan, S. S. (2004). *Singapore Parliamentary debate on education budget 2004 on 18 March 2004*. Singapore: Government of Singapore.
- Chenail, R. J. (2010). Getting specific about qualitative research generalizability. *Journal of Ethnographic & Qualitative Research*, 5(1), 1-11.
- Chua, B. H. (1998). World cities, globalisation and the spread of consumerism: A view from Singapore. *Urban Studies*, 35, 981-1000.
- Chua, C. J., & Tan, E. (1990, 13 March). Interest in 'rugged' activities tends to flag. *The Straits Times*, p. 23.
- Clark, J., Modgil, C., & Modgil, S. (1990a). Anthony Giddens, sociology and modern social theory. In J. Clark, C. Modgil, & S. Modgil (Eds.), *Anthony Giddens: Consensus and controversy* (pp. 21-27). London: Falmer Press.

- Clark, J., Modgil, C., & Modgil, S. (1990b). *Anthony Giddens: Consensus and Controversy*. London: Falmer Press.
- Cohen, I. J. (1989). *Structuration theory: Anthony Giddens and the constitution of social life*. London MacMillan.
- Convery, I., Corsane, G., & Davis, P. (2012). Making sense of place. In I. Convery, G. Corsane, & P. Davis (Eds.), *Making Sense of Place - Multidisciplinary Perspectives* (pp. 1-8). Woodbridge, Suffolk; Rochester, NY: Boydell & Brewer.
- Cooper, G. (1994). The role of outdoor education in education for the 21st century. *Journal of Adventure Education and Outdoor Leadership*, 11(2), 9-12.
- Cooper, G. (1998). *Outdoors with young people*. UK: Russell House Publishing.
- Cooper, G. (2000). Opportunities for outdoor education in the new national curriculum. *Horizons*, 9(26-29).
- Cooper, G. (2015). Outdoor education, environment and sustainability *Routledge International Handbook of Outdoor Studies* (pp. 398-408). London: Routledge.
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Los Angeles: SAGE Publications.
- Cosgriff, M. (2011). Learning from leisure: Developing nature connectedness in outdoor education. *Asia-Pacific Journal of Health, Sport and Physical Education*, 2(1), 51-65. doi:10.1080/18377122.2011.9730343
- Cosgriff, M., Legge, M., Brown, M., Boyes, M., Zink, R., & Irwin, D. (2012). Outdoor learning in Aotearoa New Zealand: voices past, present, and future. *Journal of Adventure Education & Outdoor Learning*, 12(3), 221-235. doi:10.1080/14729679.2012.699808
- Cousineau, C. (1989). Increasing outdoor recreation participation through the school perspective. *World Leisure & Recreation*, 31(2), 38-43.
- Craib, I. (1992). Anthony Giddens. *London Routledge*.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, London: SAGE Publications.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson.

- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks: SAGE Publications.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks: SAGE Publications.
- Creswell, J. W. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (4th ed.). Thousand Oaks: SAGE Publications.
- Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (1999). Adventure and the flow theory. In J. C. Miles & S. Priest (Eds.), *Adventure programming* (pp. 153-158). State College, Pa.: Venture Publishing.
- Cuthbertson, B., Socha, T. L., & Potter, T. G. (2004). The double-edged sword: Critical reflections on traditional and modern technology in outdoor education. *Journal of Adventure Education & Outdoor Learning*, 4(2), 133-144. doi:10.1080/14729670485200491
- Daipi, H. (2012). *MOE FY 2012 Committee of Supply Debate: Speech by Mr Hawazi Daipi, Senior Parliamentary Secretary, on working together: values through partnerships in education*. Singapore: Ministry of Education.
- Daniels, S. (1989). Marxism, culture, and the duplicity of landscape. In R. Peet & N. Thrift (Eds.), *New models in geography* (Vol. 2, pp. 196-220). London: Unwin Hyman.
- Davie, S. (2001). More schools are leaving the classroom to get an education. *The Straits Times*, p. 4.
- Delamont, S. (2002). *Fieldwork in Educational Settings: Methods pitfalls and perspectives* London: Routledge.
- Deng, Z., Gopinathan, S., & Lee, C. E. (2013). Introduction. In Z. Deng, S. Gopinathan, & C. E. Lee (Eds.), *Globalization and the Singapore Curriculum* (pp. 3-12). Singapore: Springer.
- Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (3rd ed.). Thousand Oaks: SAGE Publications.
- Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed., pp. 1-20). Thousand Oaks: SAGE Publications.
- Denzin, N. K., & Lincoln, Y. S. (2013). *The landscape of qualitative research* (4th ed.). Thousand Oaks: SAGE Publications.

- Denzin, N. K., & Lincoln, Y. S. (2018). *The Sage handbook of qualitative research* (5th ed.). Thousand Oaks: SAGE Publications.
- Department of Statistics. (2017). *Singapore in Figures 2017*. Singapore: Ministry of Finance Retrieved from www.singstat.gov.sg/docs/default-source/default-document-library/publications-and-papers/reference/sif2017.pdf.
- Dickson, T. (2000). Can we live life without risk? *Australian Journal of Outdoor Education*, 5(1), 2-3.
- Dimmock, C., & Goh, J. W. P. (2011). Transformative pedagogy, leadership and school organisation for the twenty-first-century knowledge-based economy: the case of Singapore. *School Leadership & Management*, 31(3), 215-234. doi:10.1080/13632434.2010.546106
- Dinah-Thompson, M. T. (2001). *Curriculum construction and implementation: A study of Queensland health and physical education*. (Doctor of Philosophy Unpublished), University of Queensland, Brisbane.
- Edwards, J. (2011). *Towards effective socially-critical environmental education: Stories from primary classrooms*. (Doctoral Unpublished), RMIT University, Australia.
- Edwards, J. (2013). Towards effective socially critical environmental education: Stories from primary classrooms. *Environmental Education Research*, 19(2), 258-259. doi:10.1080/13504622.2012.736477
- Edwards, J. (2016). *Socially-critical Environmental Education in Primary Classrooms: The Dance of Structure and Agency*. International Explorations in Outdoor & Environmental Education 1. Switzerland: Springer.
- Ee, J., & Ong, C. W. (2014). Which social emotional competencies are enhanced at a social emotional learning camp? *Journal of Adventure Education and Outdoor Learning*, 14(1), 24-41. doi:10.1080/14729679.2012.761945
- Elmore, R., Sykes, G., & Jackson, P. (1992). 'Curriculum policy'. In Jackson, P. (Ed.), *Handbook of Research on Curriculum*. New York: Macmillan; 185-215.
- Emirbayer, M., & Mische, A. (1998). What Is Agency? *American Journal of Sociology*, 103(4), 962-1023. doi:10.1086/231294
- Entrikin, J. N. (1991). *The Betweenness of Place: Towards a Geography of Modernity*. London: Macmillan Education UK.

- Erickson, F. (2018). A history of qualitative inquiry in social and educational research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 36-65). USA: Sage.
- Evans, J., & Penney, D. (1998). Policy, process and power. In K. Green and K. Hardman (Eds.), *Physical Education: A Reader* (pp. 71-83). Oxford: UK: Meyer and Meyer Sport.
- Ferreira, J. A. (2009). Unsettling orthodoxies: Education for the environment/for sustainability. *Environmental Education Research*, 15(5), 607-620. doi:10.1080/13504620903326097
- Fitzclarence, L. (1988). *The curriculum and social change: A cultural analysis of physical education* (Doctor of Philosophy Doctoral Unpublished), Deakin University, Victoria, Australia.
- Fontana, A., & Frey, J. H. (1994). Interviewing. The art of science. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 361-376). London: Sage Publications.
- Fontana, A., & Frey, J. H. (2005). The Interview. From neutral stance to political involvement. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (3rd ed., pp. 695-727). London: Sage Publications.
- Freire, P. (1972). *Pedagogy of the Oppressed*. Harmondsworth, England: Penguin.
- Fritz, R. (1999). *The path of least resistance for managers: Designing organisations to succeed*. San Francisco, California: Berrett-Koehler.
- Fry, J. M., & McNeill, M. C. (2011). 'In the Nation's good': Physical education and school sport in Singapore. *European Physical Education Review*, 17(3), 287-300. doi:10.1177/1356336X11416730
- Fullan, M. (1991). *The new meaning of educational change* (2nd ed.). London: Cassell.
- Fullan, M. (1993). *Change Forces: Probing the depths of educational reform*. New York: Falmer Press.
- Fullan, M. (2001). *The new meaning of educational change* (3rd ed.). New York: Teachers College Press.
- Fullan, M. (2007). *The new meaning of educational change* (4th ed.). New York : London: Teachers College Press.

- Fullan, M., & Park, P. (1981). *Curriculum implementation: A resource booklet*. Toronto Ontario Ministry of Education.
- Garvey, D. (1999). Do one day adventure programming activities, such as challenge courses, provide long lasting learning? Yes. . In S. Wurdinger & T. Potter (Eds.), *Controversial issues in adventure education: A critical examination* (pp. 89-95). Dubuque Iowa Kendall Hunt.
- Gassner, M. E., & Russell, K. C. (2008). Relative impact of course components at Outward Bound Singapore: a retrospective study of long-term outcomes. *Journal of Adventure Education & Outdoor Learning*, 8(2), 133-156. doi:10.1080/14729670802597345
- Gentry, K., & McLean, G. (2006). *Heartlands New Zealand Historians write about where history happened*. Auckland: Penguin.
- Gerring, J., & McDermott, R. (2007). An experimental template for case study research. *American Journal of Political Science*, 51(3), 688-701. doi:10.1111/j.1540-5907.2007.00275.x
- Gibbs, A. (2017). Focus groups and group interviews. In R. Coe, M. Waring, L. V. Hedges, & J. Arthur (Eds.), *Research Methods and Methodologies in Education* (pp. 190-196). London: Sage.
- Giddens, A. (1979). *Central problems in Social Theory: Action, Structure, and contradiction in social analysis*. London: Macmillan.
- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.
- Giddens, A. (1990). *The Consequences of Modernity*. Cambridge, UK: Polity Press.
- Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Cambridge: Polity Press.
- Gilham, B. (2000). *Case study research methods*. London: Continuum.
- Gillis, H. L., & Speelman, E. (2008). Are challenge (ropes) courses an effective tool? A meta-analysis. *Journal of Experiential Education*, 31(2), 111-135. doi:10.1177/105382590803100202
- Goh, J. W. P., & Tan, C. H. P. (2009). Policy and evidence of marketisation of education in Singapore schools. *New Educational Review*, 18(2), 235-249.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-607.

- Gomm, R., Hammersley, M., & Foster, P. (2002). Case study and generalization. In R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case study method: Key issues, key texts* (pp. 98-116). London: Sage.
- Gopinathan, S. (1996). Globalisation, the State and Education Policy in Singapore. *Asia Pacific Journal of Education*, 16(1), 74-87. doi:10.1080/02188799608542612
- Gopinathan, S. (2007). Globalisation, the Singapore developmental state and education policy: A thesis revisited. *Globalisation, Societies and Education*, 5(1), 53-70. doi:10.1080/14767720601133405
- Gopinathan, S., & Deng, Z. (2006). Fostering school-based curriculum development in the context of new educational initiatives in Singapore. *Planning & Changing*, 37(1/2), 93-110.
- Gopinathan, S., Wong, B., & Tang, N. (2008). The evolution of school leadership policy and practice in Singapore: Responses to changing socio-economic and political contexts (insurgents, implementers, innovators). *Journal of Educational Administration and History*, 40(3), 235-249. doi:10.1080/00220620802507250
- Gough, A., & Gough, N. (2016). Foreword. In Edwards, J., *Socially-critical Environmental Education in Primary Classrooms: The Dance of Structure and Agency*. Switzerland: Springer.
- Gray, T., & Martin, P. (2012). The role and place of outdoor education in the Australian National Curriculum. *Journal of Outdoor and Environmental Education*, 16(1), 39.
- Greenwood, D. A. (2013). What is outside of outdoor education? Becoming responsive to other places. *Educational Studies*, 49(5), 451-464. doi:10.1080/00131946.2013.825261
- Gregory, K., & Clarke, M. (2003). High-Stakes Assessment in England and Singapore. *Theory Into Practice*, 42(1), 66.
- Gruenewald, D. A. (2003). Foundations of place: A multidisciplinary framework for place-conscious education. *American Educational Research Journal*, 40(3), 619-654. doi:10.3102/00028312040003619
- Gruenewald, D. A. (2008). The best of both worlds: A critical pedagogy of place. *Environmental Education Research*, 14(3), 308-324. doi:10.1080/13504620802193572

- Gruenewald, D. A., & Smith, G. A. (2008). Models for place-based learning. In D. A. Gruenewald & G. A. Smith (Eds.), *Place-based education in the global age* (pp. 1-4). USA Routledge.
- Gynnild, V. (2002). Agency and structure in engineering education: Perspectives on educational change in the light of Anthony Giddens' structuration theory. *European Journal of Engineering Education*, 27(3), 297-303. doi:10.1080/03043790210140880
- Hairon, S., & Dimmock, C. (2012). Singapore schools and professional learning communities: teacher professional development and school leadership in an Asian hierarchical system. *Educational Review*, 64(4), 405-424. doi:10.1080/00131911.2011.625111
- Hales, R. (2006). The rise of individualism: The implications for promoting relations between self, others and the environment in outdoor education. *Australian Journal of Outdoor Education*, 10(2), 53-61.
- Hammersley, M., & Atkinson, P. (1997). *Ethnography: Principles in practice*. USA Routledge.
- Hargreaves, A. (1994). *Changing teachers, changing times: Teachers' work and culture in the postmodern age*. London: Cassell.
- Hargreaves, A. (2012). Singapore: the Fourth Way in action? *Educational Research for Policy and Practice*, 11(1), 7-17. doi:10.1007/s10671-011-9125-6
- Hargreaves, A., Earl, L., Moore, S., & Manning, S. (2001). *Learning To Change: Teaching beyond Subjects and Standards*: Jossey-Bass, 350 Sansome Street, San Francisco, CA 94104.
- Harvey, P. M. (2001). Landscape and commerce: Creating contexts for the exercise of power In B. Bender & M. Winer (Eds.), *Contested Landscapes: Movement, Exile and Place*. Oxford: Berg.
- Heng, S. K. (2012). *Keynote address by Mr Heng Swee Keat, Minister for Education, at the Ministry of Education Work Plan Seminar, on Wednesday, 12 September 2012 at 9.20 am at Ngee Ann Polytechnic Convention Centre*. Singapore: Ministry of Education.
- Heng, S. K. (2013). *Keynote address by Mr Heng Swee Keat, Minister for Education, at the Ministry of Education Work Plan Seminar 2013, on Wednesday, 25 September 2013 at 9.15am at Ngee Ann Polytechnic Convention Centre*. Singapore: Ministry of Education.

- Heng, S. K. (2016). *Budget 2016: Partnering for the future*. Singapore: Ministry of Finance. Retrieved from http://www.singaporebudget.gov.sg/budget_2016/budgetspeech.aspx.
- Higgins, P. (1996). Connection and Consequence in Outdoor Education. *Journal of Adventure Education and Outdoor Leadership*, 13(2), 34-39.
- Higgins, P. (1997). Outdoor Education for Sustainability: Making Connections. *Journal of Adventure Education and Outdoor Leadership*, 13(4), 4-11.
- Higgins, P. (2002). Outdoor education in Scotland. *Journal of Adventure Education and Outdoor Learning*, 2(2), 149-168.
- Higgins, P., & Kirk, G. (2006). Sustainability Education in Scotland: The Impact of National and International Initiatives on Teacher Education and Outdoor Education. *Journal of Geography in Higher Education*, 30(2), 313-326. doi:10.1080/03098260600717414
- Higgins, P., & Loynes, C. (1997). Towards consensus on the nature of outdoor education. Editorial. *Journal of Adventure Education and Outdoor Leadership*, 13(4), 2-3.
- Hill, A. (2008). Connection to place as a central theme for sustainable outdoor education. *New Zealand Journal of Outdoor Education*, 2(4), 26-46.
- Hill, A. (2010). Reflections on beliefs and practices from New Zealand outdoor educators: Consistencies and conflicts. *Australian Journal of Outdoor Education*, 14(1), 30-40.
- Hill, A. (2011). *Reenvisioning the status quo: Developing sustainable approaches to outdoor education in Aotearoa New Zealand*. (Doctoral Unpublished), University of Otago, Dunedin.
- Hill, A. (2012). Developing approaches to outdoor education that promote sustainability education. *Australian Journal of Outdoor Education*, 16(1), 15-27.
- Hill, A. (2013). The place of experience and the experience of place: Intersection between sustainability education and outdoor learning. *Australian Journal of Environmental Education*, 29(1), 18-32. doi:10.1017/aee.2013.13
- Hill, A., & Brown, M. (2014). Intersections between place, sustainability and transformative outdoor experiences. *Journal of Adventure Education and Outdoor Learning*, 14(3), 217-232. doi:10.1080/14729679.2014.918843

- Ho, S. (2011). *The purposes and functions of outdoor education in Singaporean education and society: An instrumental case study*. (Doctoral Unpublished), La Trobe University, Bundoora, Victoria.
- Ho, S. (2013). The purposes outdoor education does, could and should serve in Singapore. *Journal of Adventure Education and Outdoor Learning*, 14(2), 153-171. doi:10.1080/14729679.2013.798587
- Ho, S., Atencio, M., Tan, Y. S. M., & Chew, T. C. (2015). The inclusion of outdoor education in the formal school curriculum. In B. Humberstone, H. Prince, & K. Henderson, A. (Eds.), *Routledge International Handbook of Outdoor Studies* (pp. 277-287). London: Routledge.
- Hodge, K., & Sharp, L.-A. (2017). Case studies. In S. Brett & A. C. Sparkes (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 62-74). London: Routledge.
- Hoffman, M. F., & Cowan, R. L. (2010). Be careful what you ask for: Structuration theory and work/life accommodation. *Communication Studies*, 61(2), 205-223. doi:10.1080/10510971003604026
- Horsky, B. P., & Chew, P. G.-L. (2004). Singapore: Schools in the service of society. *Balancing change and tradition in global education reform*, 245-260.
- Humberstone, B. (1997). Perspectives on research in outdoor education: Values and ethic. *Journal of Outdoor Education and Leadership*, 14(1), 7-9.
- Humberstone, B. (2000). The 'outdoor industry' as social and educational phenomena: Gender and outdoor adventure/education. *Journal of Adventure Education & Outdoor Learning*, 1(1), 21-35.
- Humberstone, B., & Stan, I. (2012). Nature and well-being in outdoor learning: authenticity or performativity. *Journal of Adventure Education & Outdoor Learning*, 12(3), 183-197. doi:10.1080/14729679.2012.699803
- Hunter, L., Emerald, E., & Martin, G. (2013). *Participatory activist research in the globalised world social change through the cultural professions*. Netherlands: Springer.
- Irvin, D. (2008a). Weaving the threads: Challenges encountered while educating for sustainability in outdoor education. *New Zealand Journal of Outdoor Education*, 2(3), 36-53.
- Irvin, D. (2008b). Weaving the threads: Exploring identity through bicultural outdoor education experiences. *New Zealand Journal of Outdoor Education*, 2(4), 66-86.

- Jackson, T. (2005). *Motivating sustainable consumption: A review and evidence on consumer behaviour and behavioural change*. London: Sustainable Development Research Network
- James, T. (1980). The paradox of safety and risk. *Journal of Experiential Education*, 3(2), 20-23. doi:10.1177/105382598000300204
- Kamberelis, G., & Dimitriadis, G. (2005). Focus groups: Strategic articulations of pedagogy, politics, and inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 887-908). Thousand Oaks: SAGE Publications.
- Kamberelis, G., & Dimitriadis, G. (2011). Focus groups: Contingent articulations of pedagogy, politics, and inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed., pp. 545-562). Thousand Oaks: SAGE Publications.
- Kamberelis, G., & Dimitriadis, G. (2013). *Focus groups*: London: Routledge.
- Kamberelis, G., & Dimitriadis, G. (2018). Focus groups: From structured interviews to collective conversations. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 692-716). Thousand Oaks: SAGE Publications.
- Karlsen, G. E. (2000). Decentralized centralism: framework for a better understanding of governance in the field of education. *Journal of Education Policy*, 15(5), 525-538. doi:10.1080/026809300750001676
- Kemmis, S., & McTaggart, R. (2005). Participatory action research: Communicative action and the public sphere. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 559-603). Thousand Oaks: SAGE Publications.
- Knapp, C. E. (2008). Place-based curricular and pedagogical models. *Place-based education in a global age: Local diversity*, 43-80.
- Koh, A. (2004). Singapore education in "New Times": Global/local imperatives. *Discourse: Studies in the Cultural Politics of Education*, 25(3), 335-349. doi:10.1080/0159630042000247917
- Kong, L., & Yee, S. O. (2002). Singapore. In J. Fien, D. Yencken, & H. Sykes (Eds.), *Young people and the environment: An Asia-Pacific Perspective* (pp. 79-92). New York: Kluwer Academic Publisher
- Kong, L., Yuen, B., Sodhi, N. S., & Briffett, C. (1999). The construction and experience of nature: Perspectives of urban youths. *Tijdschrift voor economische en sociale geografie*, 90(1), 3-16.

- Krueger, R. A. (1994). *Focus groups: A practical guide for applied research* (2nd ed.). Thousand Oaks: SAGE Publications.
- Kudryavtsev, A., Stedman, R. C., & Krasny, M. E. (2012). Sense of place in environmental education. *Environmental Education Research*, 18(2), 229-250. doi:10.1080/13504622.2011.609615
- Kunalan, C., Aplin, N., & Quek, J. (2009). Creating a collective memory: Pioneers of physical education in Singapore. In N. Aplin (Ed.), *Perspectives on physical education and sports science in Singapore* (pp. 19-37). Singapore: McGraw-Hill.
- Layder, D. (1994). *Understanding Social Theory*. London: SAGE Publications.
- Layder, D. (2005). *Understanding Social Theory (2nd ed.)*. London: SAGE Publications.
- Lee, H. L. (1997). Speech by BG (NS) Lee Hsien Loong, Deputy Prime Minister, at the launch of National Education at Television Corporation of Singapore TV Theatre on Friday, 17 May 1997 at 9.30am [Press release]. Retrieved from www.nas.gov.sg/archivesonline/data/pdfdoc/1997051607/lhl19970517s.pdf
- Lee, H. L. (2004). Prime Minister Lee Hsien Loong's National Day Rally Speech, Sunday 22 August 2004, at the University Cultural Centre, NUS [Press release]. Retrieved from www.nas.gov.sg/archivesonline/speeches/view.html?filename=2004083101.htm
- Lee, K. Y. (2000). *From third world to first. The Singapore story (1965-2000)* (Vol. 2) (Vol. 2). Singapore: Times Editions.
- Leopold, A. (1987). *A Sand County Almanac: And Sketches Here and There*. New York: Oxford University Press.
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2018). Paradigmatic controversies, contradictions, and emerging confluences revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 108-150). Los Angeles: SAGE Publications.
- Loyal, S. (2003). *The sociology of Anthony Giddens*. London: Pluto Press.
- Loyal, S., & Barnes, B. (2001). "Agency" as a red herring in social theory. *Philosophy of the Social Sciences*, 31(4), 507-524.
- Loynes, C. (1998). Adventure in a bun. *The Journal of Experiential Education*, 21(1), 35-39.

- Loynes, C. (2002). The generative paradigm. *Journal of Adventure Education and Outdoor Learning*, 2(2), 113-125. doi:10.1080/14729670285200221
- Loynes, C. (2008). A broad river: Brathay Hall Trust 60th anniversary edition, 1946–2006. *Journal of Adventure Education & Outdoor Learning*, 8(1), 71-72. doi:10.1080/14729670802002205
- Loynes, C. (2013). Globalization, the market and outdoor adventure. In E. C. J. Pike & S. Beames (Eds.), *Outdoor adventure and social theory* (pp. 135-146). Milton Park, UK: Routledge.
- Luckner, J. L., & Nadler, R. S. (1997). *Processing the experience: Strategies to enhance and generalize learning* (2nd ed.). Dubuque, Iowa: Kendall/Hunt.
- Lugg, A. (2004). Outdoor adventure in Australian outdoor education: Is it a case of roast for Christmas dinner? *Australian Journal of Outdoor Education*, 8(1), 4-11.
- Lugg, A. (2007). Developing sustainability-literate citizens through outdoor learning: possibilities for outdoor education in Higher Education. *Journal of Adventure Education & Outdoor Learning*, 7(2), 97-112. doi:10.1080/14729670701609456
- Lui, T. Y. (2006). *Opening address by RADM (NS) Lui Tuck Yew, Minister of State, Ministry of Education, at the 2nd Outdoor Education Conference on 31 October 2006* Singapore: Ministry of Education.
- Lynch, J., & Mannion, G. (2016). Enacting a place-responsive research methodology: Walking interviews with educators. *Journal of Adventure Education and Outdoor Learning*, 16(4), 330-345. doi:10.1080/14729679.2016.1163271
- Lynch, P. (2005). Educational 'traditions' and school 'topics': outdoor education in New Zealand schools, 1935-1965. *History of Education Review*, 34(1), 19-34.
- Malpas, J. (1999). *Place and Experience: A Philosophical Topography*. UK: Cambridge University Press.
- Mannion, G., & Lynch, J. (2016). The primacy of place in education in outdoor settings. In B. Humberstone, H. Prince, & K. A. Henderson (Eds.), *Routledge International Handbook of Outdoor Studies* (pp. 85-94). New York: Routledge.
- Martin, P. (2004). Outdoor adventure in promoting relationships with nature. *Australian Journal of Outdoor Education*, 8(1), 20-28.

- Martin, P. (2008). Outdoor education in senior schooling: clarifying the body of knowledge. *Australian Journal of Outdoor Education*, 12(1), 13-24.
- Martin, P. (2010). Outdoor education and the national curriculum in Australia. *Australian Journal of Outdoor Education*, 14(2), 3-11.
- Martin, P., & Ho, S. (2009). Seeking resilience and sustainability: Outdoor education in Singapore. *Journal of Adventure Education & Outdoor Learning*, 9(1), 79-92. doi:10.1080/14729670802670167
- Martin, P., & McCullagh, J. (2011). Physical Education & Outdoor Education: Complementary but discrete disciplines. *Asia-Pacific Journal of Health, Sport and Physical Education*, 2(1), 67-78.
- May, T. (1993). *Social research: Issues, methods, and process*. Buckingham, England: Open University Press.
- Maykut, P. S., & Morehouse, R. (1994). *Beginning qualitative research : a philosophic and practical guide*. London Washington, D.C.: Falmer Press.
- McNeill, M. C., & Fry, J. M. (2010). Physical Education and Health in Singapore Schools. *Asia-Pacific Journal of Health, Sport and Physical Education*, 1(1), 13-18. doi:10.1080/18377122.2010.9730321
- Merriam, S. B. (1998). *Case study research and case study applications in education*. San Francisco, CA: Jossey-Bass Publishers.
- Miles, J. C., & Priest, S. (1999). *Adventure programming* (2nd ed.). State College, USA: Venture Publishing Inc.
- Ministry of Communications and Information. (2013). *Our Singapore Conversation Survey*. Retrieved on November 16, 2015 from Singapore: <https://www.reach.gov.sg/read/our-sg-conversation>
- Ministry of Education. (2004). A more broad-based school ranking system. [Press release]. Retrieved on October 12, 2013 from <http://www.moe.gov.sg/press/2004/pr20040317a.print.htm>
- Ministry of Education. (2013a). Every secondary school to develop two distinctive programmes for a holistic student-centric education [Press release]. Retrieved from <https://www.moe.gov.sg/news/press-releases/every-secondary-school-to-develop-two-distinctive-programmes-for-a-holistic-student-centric-education>

- Ministry of Education. (2013b). Holistic assessment to support new PE syllabus [Press release]. Retrieved from <https://www.moe.gov.sg/news/press-releases/holistic-assessment-to-support-new-pe-syllabus>
- Ministry of Education. (2013c). Infosheet on Physical Education Syllabus 2014 [Press release]. Retrieved from <https://www.moe.gov.sg/news/press-releases/infosheet-on-physical-education-syllabus-2014>
- Ministry of Education. (2014). Information sheet on 21st Century Competencies [Press release]. Retrieved from <https://www.moe.gov.sg/news/press-releases/information-sheet-on-21st-century-competencies>
- Ministry of Education. (2015). *21st Century Competencies*. Singapore: Ministry of Education Retrieved from <https://www.moe.gov.sg/education/education-system/21st-century-competencies>.
- Ministry of Finance. (2017). *Singapore Budget 2017*. Singapore: Ministry of Finance. Retrieved on September 15, 2017 from http://www.singaporebudget.gov.sg/data/budget_2017/download/27%20MOE%202017.pdf.
- Morrison, K. (2005). Structuration theory, habitus and complexity theory: Elective affinities or old wine in new bottles? *British Journal of Sociology of Education*, 26(3), 311-326. doi:10.1080/01425690500128809
- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods*, 1(2), 13-22. doi:10.1177/160940690200100202
- Mutz, M. & Muller, J. (2016). Mental health benefits of outdoor adventures: results from two pilot studies. *Journal of Adolescence*, 105-114.
- Neill, J.T. (2008). *Enhancing life effectiveness: The impacts of outdoor education programs* (Unpublished PhD thesis). University of Western Sydney, Sydney.
- Neill, J. T., Marsh, H. W., & Richards, G. E. (2003). *The Life Effectiveness Questionnaire: Development and Psychometrics*. Unpublished manuscript. Sydney, Australia: University of Western Sydney.
- Neo, B. S., & Chen, G. (2007). *Dynamic governance: Embedding culture, capabilities and change in Singapore*. Singapore: World Scientific.
- Ng, E. H. (2008). *Speech by Dr Ng Eng Hen, Minister for Education and Second Minister for Defence, at the Plan Seminar on Thursday, 25 September at the*

Ngee Ann Polytechnic Convention Centre. Singapore: Ministry of Education.

- Ng, P. T. (2007). Quality assurance in the Singapore education system in an era of diversity and innovation. *Educational Research for Policy and Practice*, 6(3), 235-247. doi:10.1007/s10671-007-9018-x
- Nicol, R. (2002a). Outdoor education: Research topic or universal value? Part one. *Journal of Adventure Education & Outdoor Learning*, 2(1), 29-41. doi:10.1080/14729670285200141
- Nicol, R. (2002b). Outdoor education: Research topic or universal value? Part two. *Journal of Adventure Education & Outdoor Learning*, 2(2), 85-99. doi:10.1080/14729670285200201
- Nicol, R. (2003). Outdoor education: Research topic or universal value? Part three. *Journal of Adventure Education & Outdoor Learning*, 3(1), 11-27. doi:10.1080/14729670385200211
- Nicol, R. (2010). *What qualifications are needed to become an outdoor teacher and what is the teacher's role?* Paper presented at the Encountering, experiencing and exploring nature in education conference, Slovenia.
- Nicol, R. (2014). Entering the Fray: The role of outdoor education in providing nature-based experiences that matter. *Educational Philosophy and Theory*, 46(5), 449-461. doi:10.1111/j.1469-5812.2011.00840.x
- Nicol, R., & Higgins, P. (1998). 'A sense of place; A context for environmental outdoor education. In P. Higgins & B. Humberstone (Eds.), *Celebrating Diversity: Learning by sharing cultural differences* (pp. 50-55). Buckinghamshire Chiltern University: European Institute for Outdoor Adventure Education.
- Orlikowski, W., & Robey, D. (1991). Information technology and the structuring of organisations. *Information Systems Research*, 2(2), 143-167.
- Orr, D. W. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.
- Orr, D. W. (2004). *Earth in mind: On education, environment, and the human prospect*: Island Press.
- Outward Bound International. (2004). *Outward Bound Singapore receives Prime Minister acknowledgement*. Retrieved from <http://www.outwardbound.org/docs/newsletter/2004-12.pdf>.

- Outward Bound Singapore. (2007). *Of courage and character: Outward Bound Singapore - the first 40 years*. Singapore: People's Association.
- Ozga, J. (2000). *Policy research in educational settings: Contested terrain*. Buckingham, England: Open University Press.
- Park, G. (1995). *Nga Uruora: The groves of life. Ecology and history in a New Zealand landscape*. Wellington, N.Z.: Victoria University Press.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). London: SAGE Publications.
- Payne, P. G., & Wattachow, B. (2008). Slow pedagogy and placing education in post-traditional outdoor education. *Australian Journal of Outdoor Education*, 12(1), 25-38.
- Penney, D., & Jess, M. (2004). Physical education and physically active lives: a lifelong approach to curriculum development. *Sport, Education and Society*, 9(2), 269-287. doi:10.1080/1357332042000233985
- Percy-Smith, B., & Malone, K. (2001). Making children's participation in neighbourhood settings relevant to the everyday lives of young people. *PLA notes*, 42(October), 18-22.
- Petrie, K. (2009). *Teaching physical education: Primary school teachers as learners*. (Doctoral Unpublished), University of Waikato, Hamilton, N.Z.
- Phipps, A. G. (2001). Empirical applications of structuration theory. *Geografiska Annaler: Series B, Human Geography*, 83(4), 189-204. doi:10.1111/j.0435-3684.2001.00106.x
- Piersol, L. (2014). Listening place. *Australian Journal of Outdoor Education*, 17(2), 43-53.
- Polanyi, M. (1966). *The tacit dimension*. Gordon City Double Bay: USA.
- Polanyi, M. (2009). *The tacit dimension*. USA: University of Chicago press.
- Pope, C. (2006). Interpretive perspectives in physical education research. In D. Kirk, D. MacDonald, & M. Sullivan (Eds.), *The handbook of physical education* (pp. 21-36). London: Sage Publications.
- Preston, L. (2004). Making connections with nature: Bridging the theory-practice gap in outdoor and environmental education. *Australian Journal of Outdoor Education*, 8(1), 12-19.

- Priest, S. (1999). The semantics of adventure programming. In J. C. Miles & S. Priest (Eds.), *Adventure Programming* (pp. 111-114). State College, USA: Venture Publishing.
- Priest, S., & Gass, M. A. (2005). *Effective leadership in adventure programming*. Champaign: Human Kinetics.
- Priestley, M., Edwards, R., Priestley, A., & Miller, K. (2012). Teacher agency in curriculum making: Agents of change and spaces for manoeuvre. *Curriculum Inquiry*, 42(2), 191-214. doi:10.1111/j.1467-873X.2012.00588.x
- Prince, H. (2017). Outdoor experiences and sustainability. *Journal of Adventure Education and Outdoor Learning*, 17(2), 161-171. doi:10.1080/14729679.2016.1244645
- Pyle, R. M. (2008). No child left inside: Nature study as a radical act. In D. A. Gruenewald & G. A. Smith (Eds.), *Place-based education in the global age* (pp. 155-172). New York: Routledge.
- Relph, E. (1976). *Place and placelessness*. London: Pion.
- Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi, M. Y., Sanders, D., & Benefield, P. (2004). A review of research in Outdoor Learning. *UK National Foundation for Educational Research and Kings College London*.
- Ritzer, G. (2008). *The McDonaldization of society 5*. Los Angeles, California: Pine Forge Press.
- Ritzer, G. (2013). *The McDonaldization of society* (7th ed.). Thousand Oaks: Sage.
- Rizvi, F., & Lingard, B. (2010). *Globalizing Education Policy*. New York: Taylor and Francis.
- Roberts, J. W. (2008). From experience to neo-experiential education: Variations on a theme. *Journal of Experiential Education*, 31(1), 19-35.
- Roberts, J. W. (2011). *Beyond Learning by Doing: Theoretical Currents in Experiential Education*. USA: Routledge.
- Rose, J., & Cachelin, A. (2014). Critical sustainability in outdoor education: Connection to place as a means to social justice and ecological integrity. *The Taproot*, 23(1), 7-16.
- Sagor, R. (2011). *The action research guidebook: A four-stage process for educators and school teams* (2nd ed.). Thousand Oaks: Corwin.

- Saravanan, V. (2005). 'Thinking Schools, Learning Nations': Implementation of curriculum review in Singapore. *Educational Research for Policy and Practice*, 4(2), 97-113. doi:10.1007/s10671-005-1543-x
- Schoel, J., Prouty, D., & Radcliffe, P. (1988). *Islands of healing: A guide to adventure based counseling*. Hamilton, USA: Project Adventure.
- Schwandt, T. A., & Gates, E. F. (2018). Case study methodology. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 341-358). Los Angeles: SAGE Publications.
- Scrutton, R.A. (2015). Outdoor adventure education for children in Scotland: Quantifying the benefits. *Journal of Adventure Education and Outdoor Learning*, 15(2), 123-137.
- Seaman, J. (2008). Experience, reflect, critique: The end of the "Learning Cycles" era. *Journal of Experiential Education*, 31(1), 3-18.
- Seawright, J., & Gerring, J. (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political Research Quarterly*, 61(2), 294-308. doi:10.1177/1065912907313077
- Seyfarth, B. (2000). Structuration theory in small group communication: A review and agenda for future research. *Annals of the International Communication Association*, 23(1), 341-380. doi:10.1080/23808985.2000.11678977
- Shamai, S., & Ilatov, Z. (2005). Measuring sense of place: Methodological aspects. *Tijdschrift voor economische en sociale geografie*, 96(5), 467-476. doi:10.1111/j.1467-9663.2005.00479.x
- Shanmugaratnam, T. (2004). *Speech by Acting Minister for Education at the 45th General Meeting of the Singapore Sports Council on 17th January 2004*. . Singapore: Ministry of Education.
- Shilling, C. (1992). Reconceptualising structure and agency in the sociology of education: Structuration theory and schooling. *British Journal of Sociology of Education*, 13(1), 69-87. doi:10.1080/0142569920130105
- Siau, M. E. (2012, March 18). Building a Singaporean culture takes time, says ex-president. *The Straits Times*.
- Sibthorp, J., Paisley, K., Gookin, J., & Furman, N. (2008). The pedagogic value of student autonomy in adventure education. *Journal of Experiential Education*, 31(2), 136-151.
- Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text and interaction* (3rd ed.). London: Sage.

- Silverman, D. (2010). *Doing qualitative research: A practical handbook* (3rd ed.). Thousand Oaks: SAGE Publications.
- Sim, J. B. Y., & Print, M. (2009). The state, teachers and citizenship education in Singapore schools. *British Journal of Educational Studies*, 57(4), 380-399. doi:10.1111/j.1467-8527.2009.00446.x
- Simon, H. (2009). *Case study research in practice*. Thousand Oaks: SAGE Publications.
- Smith, G. A. (2002). Going local. *Educational Leadership*, 60(1), 30.
- Sobel, D. (2005). *Place-based education: Connecting classrooms & communities*. USA: The Orion Society.
- Sparkes, A. C. (1990). *Curriculum Change and Physical Education: Towards a micropolitical understanding*. Australia: Deakin University.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks: SAGE Publications.
- Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 443-466). Thousand Oaks: SAGE Publications.
- Stake, R. E. (2006). *Multiple case study analysis*. New York: The Guilford Press.
- Stedman, R. C. (2003). Is it really just a social construction?: The contribution of the physical environment to sense of place. *Society & Natural Resources*, 16(8), 671-685. doi:10.1080/08941920309189
- Stewart, A. (2004). Decolonising encounters with the Murray River: Building place responsive outdoor education. *Australian Journal of Outdoor Education*, 8(2), 46-55.
- Stewart, A. (2008). Whose place, whose history? Outdoor environmental education pedagogy as 'reading' the landscape. *Journal of Adventure Education & Outdoor Learning*, 8(2), 79-98. doi:10.1080/14729670801906125
- Stones, R. (2005). *Structuration Theory*. New York: Palgrave Macmillan.
- Storey, D. (2012). Land, territory and identity. In I. Convery, G. Corsane, & P. Davis (Eds.), *Making Sense of Place - Multidisciplinary Perspectives* (pp. 11-22). Woodbridge, Suffolk; Rochester, NY: Boydell & Brewer.

- Straker, J. (2008). Unearthing 'the outdoors' in outdoor education. *New Zealand Journal of Outdoor Education*, 2(4), 103-124.
- Stringer, E. T. (2008). *Action research in education* (2nd ed.). Upper Saddle River, N.J.; Columbus, Ohio: Pearson Prentice Hall.
- Strong, D. (1995). *Crazy mountains: Learning from wilderness to weigh technology*. New York: State University of New York.
- Suzuki, D. (2003). *A David Suzuki collection: A lifetime of ideas*. USA: Allen & Unwin.
- Tan, C. (2005). The potential of Singapore's ability driven education to prepare students for a knowledge economy. *International Educational Journal*, 6(4), 446-453.
- Tan, C., & Ng, P. T. (2007). Dynamics of change: decentralised centralism of education in Singapore. *Journal of Educational Change*, 8(2), 155-168. doi:10.1007/s10833-006-9016-4
- Tan, C. Y. (2013). Organisational legitimacy of the Singapore Ministry of Education. *Oxford Review of Education*, 39(5), 590-608. doi:10.1080/03054985.2013.830098
- Tan, I. G.-C., Lee, C. K.-E., & Goh, K. C. (1998). A survey of environmental knowledge, attitudes and behaviour of students in Singapore. *International Research in Geographical and Environmental Education*, 7(3), 181-202. doi:10.1080/10382049808667574
- Tan, J. (2011). *Values education amid globalization and change: the case of national education in Singapore*: USA:Routledge.
- Tan, M. (2005). *Examining the impact of Outward Bound Singapore program on the life effectiveness of adolescents*. (Master of Science Unpublished), University of New Hampshire, USA.
- Tan, Y. S. M., & Atencio, M. (2016). Unpacking a place-based approach – “What lies beyond?” Insights drawn from teachers' perceptions of Outdoor Education. *Teaching and Teacher Education*, 56, 25-34. doi:<http://dx.doi.org/10.1016/j.tate.2016.02.001>
- Tay, K. S. (2006). *Factors that influence the perception of life-effectiveness of secondary two pupils in a 3-day adventure-based residential programme in Singapore* (Master of Science Unpublished), University of Edinburgh, Edinburgh.

- Taylor, S. J., & Bogdan, R. (1998). *Introduction to Qualitative Research Methods* (3rd ed.). New York: John Wiley & Sons.
- Teo, P., & Huang, S. (1996). A sense of place in public housing: A case study of Pasir Ris, Singapore. *Habitat International*, 20, 307-325.
- The Straits Times. (2016, 25 March 2016). \$250m Outward Bound campus for Coney Island. *The Straits Times*. Retrieved from <http://www.straitstimes.com/singapore/250m-outward-bound-campus-for-coney-island>
- Thomas, G. (2015). Signature pedagogies in outdoor education. *Asia-Pacific Journal of Health, Sport and Physical Education*, 6(2), 113-126. doi:10.1080/18377122.2015.1051264
- Thorburn, M., & Allison, P. (2010). Are we ready to go outdoors now? The prospects for outdoor education during a period of curriculum renewal in Scotland. *Curriculum Journal*, 21(1), 97-108.
- Thorburn, M., & Gray, S. (2010). *Physical Education – Picking up the baton: Policy & Practice in Education*. Edinburgh, UK: Dunedin Academic Press.
- Thrift, N. (1993). The arts of the living, the beauty of the dead: Anxieties of being in the work of Anthony Giddens. *Progress in Human Geography*, 17(1), 111-121. doi:10.1177/030913259301700109
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration*. Wellington, New Zealand: Ministry of Education, New Zealand Retrieved from <http://www.oecd.org/edu/school/48727127.pdf>.
- Tinning, R. (2004). Conclusion: Ruminations on body knowledge and control and the spaces for hope and happening. In J. Evans, B. Davies, & J. Wright (Eds.), *Body knowledge and control: Studies in the sociology of physical education and health* (pp. 218-238). London: Routledge.
- Torff, B. (1999). Tacit knowledge in teaching: Folk pedagogy and teacher education. In R. Sternberg & J. A. Horvath (Eds.), *Tacit knowledge in professional practice: Researcher and practitioner perspectives* (pp. 195-235). Mahwah: Lawrence Erlbaum.
- Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837-851. doi:10.1177/1077800410383121
- Tucker, K. (1998). *Anthony Giddens and Modern Social Theory*. London: Sage Publications.

- Turner, J. H. (1991). Structuration Theory of Anthony Giddens. In J. H. Turner (Ed.), *The structure of sociological theory* (Vol. 5, pp. 519-539). USA: Wadsworth Thomson.
- Turner, J. H. (2003). Structuration Theory of Anthony Giddens. In J. H. Turner (Ed.), *The structure of sociological theory* (7 ed., pp. 476-490). Belmont, California: Wadsworth Thomson.
- Urry, J. (1982). Duality of structure: Some critical issues. *Theory, Culture & Society*, 1(2), 100-106. doi:10.1177/026327648200100211
- VanWynsberghe, R., & Khan, S. (2007). Redefining case study. *International Journal of Qualitative Methods*, 6(2), 80-94.
- Varley, P., & Taylor, S. J. (2014). *Being there: Slow, fast, traditional, wild, urban, natural....* Paper presented at the 2nd International Adventure Conference in Fort William: The Centre for Recreation and Tourism Research: University of the Highlands and Islands.
- Vaske, J. J., & Kobrin, K. C. (2001). Place attachment and environmentally responsible behavior. *The Journal of Environmental Education*, 32(4), 16-21. doi:10.1080/00958960109598658
- Velayutham, S. (2007). *Responding to globalization: Nation, culture and Identity in Singapore*. Singapore: Institute of Southeast Asian Studies (ISEAS).
- Walter, E. V. (1988). *Placeways: A theory of the human environment*. UNC Press Books.
- Wang, C. K. J., Ang, R. P., Teo-Koh, S. M., & Kahlid, A. (2004). Motivational predictors of young adolescents' participation in an outdoor adventure course: A self-determination theory approach. *Journal of Adventure Education & Outdoor Learning*, 4(1), 57-65.
- Wang, C. K. J., Liu, W.-C., & Kahlid, A. (2006). Effects of a five-day Outward Bound course on female students in Singapore. *Australian Journal of Outdoor Education*, 10(2), 20-28.
- Waring, M. (2017). Finding your theoretical position. In R. Coe, M. Waring, L. V. Hedges, & J. Arthur (Eds.), *Research Methods and Methodologies in Education* (pp. 15-20). London: SAGE Publications.
- Wattchow, B. (2004). Experience of Place: Lessons on teaching cultural attachment to place. In B. Henderson & N. Vikander (Eds.), *Nature First: Outdoor life the friluftsliv way* (pp. 235-245). Canada: Canada Natural Heritage Book.

- Wattchow, B. (2007). Playing with an unstoppable force: Paddling, river-places and outdoor education. *Australian Journal of Outdoor Education*, 11(1), 10-20.
- Wattchow, B., & Brown, M. (2011). *A Pedagogy of Place: Outdoor education for a changing world*. Clayton, Vic.: Monash University Publishing.
- Wattchow, B., & Higgins, P. (2013). Through outdoor education: A sense of place on Scotland's River Spey In B. Wattchow, R. Jeannes, L. Alfrey, T. D. Brown, A. Cutter-Mackenzie, & J. O'Connor (Eds.), *The Socioecological educator: A 21st Century renewal of physical, health, environmental and outdoor education* (pp. 173-188). London: Springer.
- Wattchow, B., Jeannes, R., Alfrey, L., Brown, T. D., Cutter-Mackenzie, A., & O'Connor, J. (2013). *The socioecological educator: A 21st century renewal of physical, health, environment and outdoor education*. Dordrecht: Springer.
- Wee, B. (2008). Moving Toward Sustainability? The face of environmental education in Singapore. *Green Teacher*(83), 35-38.
- Weigert, A. J., & Gecas, V. (2005). Symbolic interactionist reflections on Erikson, identity, and postmodernism. *Identity*, 5(2), 161-174.
- Weimer, D. L., Vining, A. R., & Englewood, E. (2004). *Policy Analysis: Concepts and Practice (4th ed.)*. New Jersey: Prentice Hall.
- Wheeler-Brooks, J. (2009). Structuration theory and critical consciousness: Potential applications for social work practice. *Journal of Sociology & Social Welfare*, 36(1).
- Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science*, 49(6), 830-840.
- Wolfe, B., & Samdahl, D. (2005). Challenging assumptions: Examining fundamental beliefs that shape challenge course programming and research. *Journal of Experiential Education*, 28(1), 25-43.
- Woodhouse, J. L., & Knapp, C. E. (2000). Place-Based Curriculum and Instruction: Outdoor and Environmental Education Approaches. (pp. 4): ERIC.
- Yates, J. (1997). Using Giddens' structuration theory to inform business history. *Business and Economic History*, 26(1), 159-183.
- Yates, L., & Grumet, M. (2011). *World Yearbook of Education 2011: Curriculum in today's world: Configuring knowledge, identities, work and politics*. London: Routledge.

- Yeoh, B., & Kong, L. (1996). The notion of place in the construction of history, nostalgia and heritage in Singapore *Singapore Journal of Tropical Geography*, 17(1), 52-65. doi:10.1111/j.1467-9493.1996.tb00084.x
- Yeong, P. K. (2012). *Fostering transformative learning: A phenomenological study into the lived experience of reflection and transformation in adventure education* (Doctoral Unpublished), Monash University, Australia.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks: SAGE Publications.
- Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks: SAGE Publications.
- Yip, J. S. (1997). Reflections and renewal in education. *Education in Singapore: A book of readings*, 385-400.
- Yuen, S., & Ng, K. G. (2016, 30 March 2016). New Outward Bound Singapore campus to occupy 10% of Coney Island; 45,000 youth to take part every year by 2020. *The Straits Times*. Retrieved from <http://www.straitstimes.com/singapore/education/new-outward-bound-singapore-campus-to-occupy-10-of-coney-island-45000-youth-to>
- Zink, R. (2003). Abseiling at five, rafting at ten, what do we do with them when they are 15? . *New Zealand Journal of Outdoor Education*, 1(2), 56-62.
- Zink, R., & Burrows, L. (2006). Foucault on camp: What does his work offer outdoor education? *Journal of Adventure Education & Outdoor Learning*, 6(1), 39-50. doi:10.1080/14729670685200731
- Zink, R., & Burrows, L. (2008). 'Is what you see what you get?' The production of knowledge in-between the indoors and the outdoors in outdoor education. *Physical Education and Sport Pedagogy*, 13(3), 251-265. doi:10.1080/17408980701345733
- Zink, R., & Leberman, S. (2001). Risking a debate - Redefining risk and risk management: A New Zealand case study. *Journal of Experiential Education*, 24(1), 50-57. doi:10.1177/105382590102400110

Appendices

Appendix A: Information Sheet

Information Sheet

Department of Sports & Leisure Studies
 Faculty of Education
 The University of Waikato
 Private Bag 3105
 Hamilton, New Zealand



Ph: 64-7-838 4035
 Fax: 64-7-838 4272

Date:

Dear _____

1. I would like to request for your kind assistance in a research study I am undertaking over the next 2 years. The study is on how place-responsive pedagogy in outdoor education can be introduced successfully in Secondary Schools in Singapore. I would like to invite you to participate in this research study for a period of 10 months commencing from 22 October 2012 to 31 August 2013.

2. I will be visiting your school to talk with you about the research in August 2012. Your involvement will be over two phases once your informed consent is given.

Phase One:

a. An initial face- to -face interview in end October 2012 to find out your beliefs and practice of outdoor education with reference to place-responsive pedagogy in outdoor education.

b. After the individual interview, you will be invited for a focus group discussion together with the members of your team to provide a collective view of the beliefs and practice of outdoor education in your school and for me to identify what you think is important to introduce a place-responsive outdoor education programme in school.

Phase Two: Action research

c. Once the workshop is completed, your team and I will co-design and implement a place-responsive outdoor education programme in school using the action research methodology.

d. Two interviews and two focus groups discussions will be conducted in this phase, one at mid-point of the implementation and the other at the end of the project to review the strategies and efficacy of the programme.

3. Please indicate in the Consent Form provided whether you would like to participate in the interviews and focus group discussions.

4. Please be assured that the information you provide in the interviews and focus group discussion will be kept confidential by me, and that I will not reveal your identity at any time. As the project will involve a small team of four to five participants in your school, maintaining confidentiality will be challenging. You are advised not to share your identity or pseudonym to maintain confidentiality. What you said in your responses may be quoted in my report, but your name will not be revealed.

5. Once the data collected from the interviews and focus group discussion are transcribed they will be securely stored and locked up. The findings from the data collected and analysed will be used for the purpose of completing the requirement of a Doctor of Philosophy and may also be used for presentations, conferences and academic journal articles. I will share the findings of the study and a final report will be given to you.

Thank you so much for your time. Your cooperation is very much appreciated.

Yours sincerely,

Tay Kim Seng
Doctoral Student,
University of Waikato, Hamilton, NZ

Appendix B: Informed Consent

Consent Form

Department of Sports & Leisure Studies
 Faculty of Education
 The University of Waikato
 Private Bag 3105
 Hamilton, New Zealand
 Ph: 64-7-838 4035
 Fax: 64-7-838 4272



Contact numbers of Investigators:

Researcher: Tay Kim Seng 97619966 (Singapore), +64 0210407423 (NZ)

Dissertation Chief Supervisor: Professor Dawn Penney (07) 8384500 Ext 7735

Participant Consent Form

I, _____ (print full name), agree to participate in the study. I understand that my participation in this study will require the following processes and I agree to these as stated:

- Three face-to-face semi-structured interview conversation of 45 to 60 minutes duration and three focus group discussion of 1 to 2 hours duration. Field notes and digital tape recordings will be taken during these interviews and meetings and any worksheets or group notes which are completed will be collected by the researcher.
- My confidentiality will be maintained in this study by the following procedures:
 - I will be identified by a pseudonym in all field notes and in the dissertation and in any presentation or publication of this study.
 - The researcher, Tay Kim Seng, is the only person who will know both my identity and my pseudonym.
 - The researcher, Tay Kim Seng will do his utmost best to protect my identity as confidentiality cannot be guaranteed in the small team I am in. I am advised not to share my identity and my pseudonym with anyone else.
 - Field notes will also be available to the supervisors/examiners, however, they will not be aware of my identity. All information gained from the focus group sessions process will be used for illustrative purposes only. Any quotations used in publication will not be able to be identified to me personally as I will have a pseudonym.

- I have the opportunity to withdraw from this study at any time and can adjust or withdraw my interview and focus group transcripts up until data analysis commences.
- If I have any queries I can contact Tay Kim Seng on 97619966 (Singapore) or +640210407423 (NZ) or via email kst7@waikato.ac.nz.
- If I have any concerns regarding my rights in this study, I may contact the Chief Supervisor of this study:

Professor Dawn Penney
University of Waikato
Department of Sports and Leisure Studies
Faculty of Education
PO Box 3105
Hamilton
Phone: 078384500 Ext 7735

My signature below indicates that I have agreed to participate in this study, that I have received a copy of this consent form and an information letter about the study.

Signature of Participant _____ Date _____

Email:

Mobile (Optional):

Appendix C: Interview/Focus Group Discussion Questions For Phase One of Research Project

Knowledge, beliefs and practices of outdoor education

Welcome statement, Introduction to interview...

Individual interview

1. How long have you been teaching?
2. What is your role in the school?
3. How long have you been involved in teaching outdoor education?
4. What influenced you to get involved in the teaching of outdoor education?
5. What are your qualifications in outdoor education?
6. To what extent do you feel prepared to take on the role of an outdoor educator?
7. What are the outdoor education programmes/activities your school has implemented?
8. How would you describe OE practices in Singapore?
9. Do you see the need to change the existing OE practices? Why?
10. What is effective OE pedagogy?
11. What are the essential components of good outdoor education?
12. What are the enablers to your practice of outdoor education in your school?
13. What are some of the challenges you experienced in teaching outdoor education?
14. How and in what ways have you been supported in your role as an outdoor educator?
15. How and in what ways have you been inhibited in your role as an outdoor educator?
16. What is place-responsive outdoor education to you?
17. What are some examples of place-responsive (place-based) outdoor education practiced in your school?

Focus Group discussion

1. How long has the department be involved in the running of the outdoor education programme in the school?
2. What are the outdoor education programmes/activities your school have implemented?
3. How have the OE programmes in your school changed over the years? Why?
4. Do you see any need for change in your OE programme/pedagogy? Why?
5. To what extent do you feel prepared to take on the role of an outdoor educator?
6. What do you believe effective outdoor education is?
7. How would you describe OE practices in Singapore?
8. Do you see the need to change the existing OE practices? Why?
9. What is effective OE pedagogy?

10. What are some of the challenges you experienced in teaching outdoor education?
11. How and in what ways have you been supported in your role as outdoor educators?
12. What is your understanding place-responsive outdoor education?
13. What is the extent of place-responsive (place-based) outdoor education practiced in your school?
14. How do you think place-responsive outdoor education could be implemented in your school?

Prompts:

1. Tell me more about...
2. Can you clarify what you said?
3. What do you mean by that?
4. Can you provide an example?
5. Why would that be so?
6. How do you know?

Note: Interview questions may change according to the direction that the interviewee/s may take during the interview.

Appendix D: Professional Development Workshop Schedule

Plan for Professional development workshop

Time	Programme
8.30am to 10.00am	Check in: Introduction of self Purpose and objectives of workshop. Short overview of Programme for the two days. Exercise: Narration of Individual Life History in relation to places.
10.30am to 12pm	Discussion and sharing on issues with existing practice of OE in schools. Reference: Chapter 2 of POP
1pm to 2pm	Discussion and sharing on Place-responsive outdoor education Reference: Chapter Three of POP
2pm to 4.40pm	Discussion on four Signposts to Place-responsive pedagogy. Application of the Signposts: Practical Solo and silence walk in Labrador Park (outside MOE OE Centre). Bring camera phone and sketch/note book to capture/pen down/sketch images that interests you along the way. Map up route taken. Interviews of local residents/visitors Place representation – Poem and photo montage of place Reference: Chapter 9 of POP
4.40pm to 5pm	Check out: Sharing of day experiences. Questions and thoughts.

Day Two

Review existing OE programmes in the school

Use of the 4 Signposts of POP as a guide for developing a more place-responsive OE programme.

Appendix E: Interview Questions for Phase Two

1. How would you describe your journey to be a more place-responsive outdoor educator so far?
2. How would you define outdoor education currently in light of your experience in designing and implementing a place-responsive outdoor education programme?
3. What changes did you and your team made to incorporate a place-responsive approach in outdoor education for your school?
4. With the implementation of a place-responsive outdoor education in your school, what has changed in the way you view outdoor education?
5. With the implementation of a place-responsive outdoor education in your school, what has changed in the way you practice outdoor education?
6. What motivate you to change the outdoor education programme in your school to include a more place-responsive approach?
7. What changes (if any) would you made to the design of the outdoor education in your school to make the programmes more place-responsive? (Programme, Teacher, Resources)
8. What changes (if any) would you made to the implementation of the outdoor education in your school to make the programme more place-responsive?
9. What helped you in your journey to be a more place responsive outdoor educator?
10. What are the challenges to your practice of a place-responsive pedagogy in outdoor education?
11. What will help you in your practice of a place-responsive pedagogy in outdoor education?
12. Using the scale of 1 to 10, 1 being totally not ready and 10 being totally ready, how would you rate your readiness to be a place-responsive outdoor educator?
13. Using the scale of 1 to 10, 1 being totally not ready and 10 being totally ready, how would you rate your team readiness to be place-responsive outdoor educators?
14. How did the team develop the capacity to design and implement the place-responsive approaches in outdoor education?
15. What plan (if any) do you have to develop your team capacity to further design and implement a place-responsive outdoor education approaches in your school?
16. What plan do you have (if any) to share your school's experience in designing and implementing the place-responsive approaches with other interested schools?