



THE UNIVERSITY  
*of* EDINBURGH

**AN INVESTIGATION INTO THE INFLUENCE OF  
OUTDOOR ENVIRONMENTAL EDUCATION COURSES ON THE  
ENVIRONMENTAL ATTITUDE AND BEHAVIOURS  
OF MALAYSIAN PARTICIPANTS: A LIFE HISTORY APPROACH**

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A thesis submitted in fulfilment of requirements for the degree of  
Doctor of Philosophy

to

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## DECLARATION

I certify that this thesis has been written by me and is my own work except where explicitly stated otherwise. I further declare that it has not been submitted for any other degree or professional qualification.

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Sharifah Intan Sharina Syed Abdullah

Date: 16<sup>th</sup> January 2018

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## ABSTRACT

This research explores the influences of Residential Outdoor Environmental Education (ROEE) courses on participants' environmental attitudes and behaviours, and whether and to what extent participants' life experiences following the ROEE courses shape their subsequent environmental attitudes and behaviours. To date, research in this area has tended to adopt a psychological perspective and few studies have been undertaken which employ a social perspective. Drawing on the literature on Education for Sustainable Development (ESD) and Dewey's concept of continuity of experience, the current study addresses this gap by investigating the subsequent experiences and behaviours of students who attended ROEE courses during their primary or secondary education in Malaysia from both psychological and social perspectives.

Data were collected in four phases. Phase one was a documentary analysis, phase two involved an online survey, and phases three and four featured semi-structured interviews: an initial exploratory interview and then an extended interview with each of the participants. Each of the eleven interview participants had attended a ROEE course during either their primary or secondary education, although the time that had passed since their attendance varied quite considerably. Four of the participants' experiences are presented as detailed vignettes to bring their voices to the fore and acknowledge the complexity and individuality of their life histories. Analysis at this stage was framed by the Transtheoretical model (TTM), which provides a framework that includes both psychological and social perspectives. This is followed by thematic analysis, within and across the interview sets, using constructivist grounded theory, and findings are presented as binary themes.

Findings show that ROEE is not the primary event or intervention that accounts for notable environmental behaviour change. Rather, environmental behaviour change, where participants perform various forms of pro-environmental action, usually occurs as a result of their subsequent life experiences – especially those associated with their social identity, which is closely related to social groups, social norms, laws and policies. The findings show that psychological perspectives that focus solely on individuals do not suffice to capture the richness of participants' experiences.

Accordingly, a life history perspective, which uses the TTM to analyse the participants' accounts, is viewed as a powerful lens through which to explore their experiences and how these are linked to their environmental behaviours. Six binary practices are viewed in this study as key components of such behaviours: conforming/transforming action; compulsory/optional action; direct/indirect action; public/private-sphere action; activist/non-activist action; and biospheric/anthropocentric-oriented action.

The conceptual and methodological contributions of these findings pay particular attention to two items: a model that reconceptualises the contextualised processes of environmental behaviour change by encompassing critical social and psychological factors; and the methodological combination of using constructivist grounded theory, a life history approach, and the TTM. In terms of implications for policy, the findings strongly suggest that the Malaysian government needs to establish an explicit policy for conducting ROEE, and that the approaches to learning espoused by ROEE are in need of serious revision. Other research implications include the need to establish an officially-endorsed policy on ROEE and non-formal education by Malaysian government officials.

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## LIST OF ABBREVIATIONS

CIESIN	Center for International Earth Science Information Network
EPU	Economic Plan Unit
MENGO	Malaysian Environmental Non-Governmental Organisation
ROEE	Residential Outdoor Environmental Education
TTM	Transtheoretical Model
UNESCO	The United Nations Educational, Scientific and Cultural Organization
WWF	World Wildlife Fund

## Chapter 1 INTRODUCTION

### 1.1 Chapter overview

This study set out to investigate the influence of Malaysian Residential Outdoor Environmental Education (ROEE) courses on the participants' environmental attitudes and behaviours. More specifically, the study began by investigating the extent to which participants' experiences on these courses translate into attitudes and behaviours that might be called 'pro-environmental'. However, as the research progressed through its different data gathering phases, the focus of the study shifted to include an investigation of the effect of the participants' subsequent life experiences on the environmental outcomes studied (i.e. environmental attitudes and behaviours).

Malaysian ROEE is one of the central topics of this study; however, the literature that supports it is both sparse and divided. There are only two existing studies on ROEE courses (Asirvatham, 2009; and Md Taff et al., 2010). Asirvatham (2009) uses the term 'camping', while Md Taff et al. (2010) use 'residential outdoor education'. Both of the studies use quantitative approaches and both investigate the short-term effects of ROEE. However, these studies differ from one another in terms of the samples selected for each study. Asirvatham (2009) investigates the knowledge and attitudes of primary and secondary students towards wetlands before and after they had attended the ROEE courses, while the study by Md Taff et al. (2010) uses Malaysian university students as their sample to study the influence of ROEE courses on their environmental attitudes.

In the section which follows (**Section 1.2**), the term ROEE is defined. This is followed by an introduction to ROEE programmes in Malaysia (**Section 1.3**) and an account of how they have been provided for primary and secondary school students. Following on from this, a rationale for how the current study was devised is provided in **Section 1.4**. The rationale given in this section is primarily informed by the literature in the field. **Section 1.5** provides an overview of my personal experience of, and interest in, the area and sets out my reasons for conducting this research. The final section (**Section 1.6**) outlines the structure of this thesis.

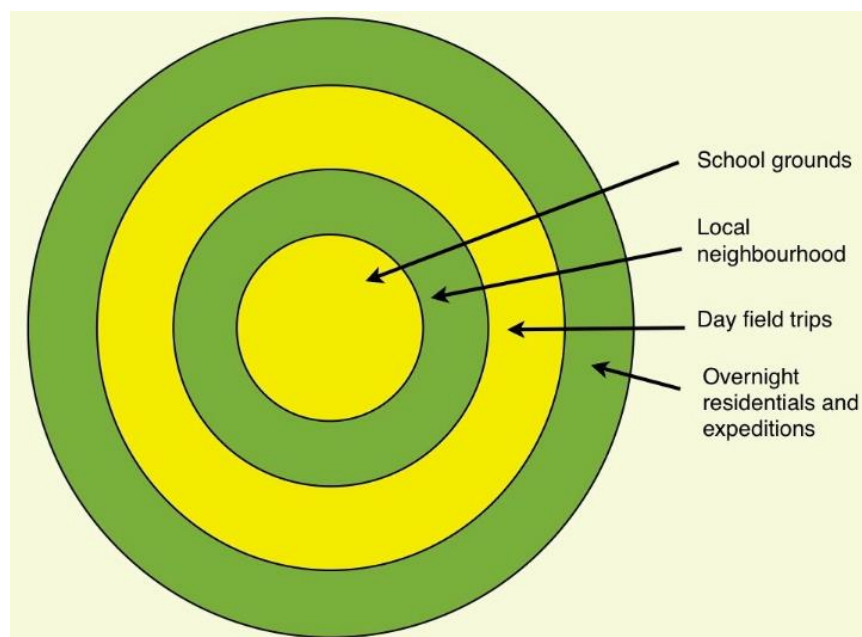
## 1.2 Definition of residential outdoor environmental education

ROEE is the term adopted within this study to refer to environmental education courses that take place in non-formal residential outdoor learning settings where participants spend nights away from their homes. ROEE courses can be offered as both profit-making and non-profit-making courses, and those who offer them usually liaise with schools, universities or other institutions/organisations to recruit participants.

Detailed definitions of the term 'environmental education' are provided in **Chapter 2**. However, it is important to note that, within this **Introduction**, when I am referring to environmental education, I am drawing on how it is defined nationally within Malaysia (e.g. Yusoff, 2003), and on the international and United Nations' definitions, which refer to it as sustainable development (Handl, 2012; Sohn, 1973; United Nations, 1972). I am using these different bodies of literature to show that environmental education is an instrument for achieving the agenda of sustainable development, where the objective of sustainable development is to maintain an ecological balance by avoiding the degradation of the natural environment while engaging with and shaping the future of global environmental and developmental needs. Subsequently, these literatures have helped me to define pro-environmental behaviour, a term constantly used throughout this thesis. As Steg and her colleagues (i.e. De Groot & Steg, 2010; Steg & Vlek, 2009; Steg et al., 2014) have defined it, pro-environmental behaviour is regarded as a behaviour that would enhance the quality of environment and produce an impact towards the sustainable development agenda. In terms of linguistics, the prefix "pro" adds a certain value to the meaning of environmental behaviour with its inherent suggestion that this is not a passive stance but an action oriented one. Environmental behaviour could be "any action that affects the quality of the environment, in either a positive or negative way, either resulting or not resulting from pro-environmental intent" (Steg et al., 2014, p. 104). In many literature bases, the terms 'action' and 'behaviour' are often used without clear clarification on the difference between them. According to Jensen and Schnack (2006), action is something performed due to personal decisions made by a conscious mind. However, I am in agreement with Jensen & Schnack, (2006) and Kinsella & Tinsley (2004) who maintain that social factors are a relatively unexplored influence on pro-environmental behaviours. This is a major theme within this

thesis and something to which I will return to later. For the moment it is important to point out that both personal and social influences are significant to this thesis. For this reason, I introduce the Transtheoretical Model (TTM) and its supporting literature, which differentiates between actions as single one-off occurrences and behaviour that appears more long term and the result of collective of actions over a longer period of time (Prochaska et al., 1992).

Eshach (2007) defines non-formal education as learning that may be appropriately planned, either explicitly or implicitly; the conditions for learning move beyond the kind of formal schooling that is highly structured and curriculum-led. The definition of residential outdoor learning was derived from the description of the fourth zone of a concentric circle of outdoor learning (**Figure 1.1**) that Beames, Higgins and Nicol proposed in 2012. According to these researchers, characteristics of the fourth zone may involve some logistical challenges such as “transportation, accommodation, equipment, food and instruction” (p.6), which are usually managed by the course organiser or residential provider (Beames et al., 2012).



**Figure 1.1** Concentric circles of outdoor learning (Beames, Higgins & Nicol, 2012)

This model is helpful because it demonstrates how participants on ROEE courses are geographically remote from the everyday location of their schools and homes. I also followed Higgins and Nicol's (2002) suggestion that experiential learning in outdoor education should involve learners across a range of ages and, most importantly, that it should be seen to be progressive in terms of age and stage. In Malaysia, children enrol into primary education at the age of 7 and attend secondary school between the ages of 13 and 17 years. The model above helps to show the potential for geographical progression whereby outdoor learning may start within the range of the school grounds (Zone 1) before the students are taken out further into the local neighbourhood (Zone 2), before they are taken on day excursions or field trips (Zone 3), and then further away from home and overnight (Zone 4) (Beames et al., 2012). In the section that follows, an account of how ROEE in Malaysia has been provided for school students is given.

### **1.3 Introduction to Malaysian residential outdoor environmental education**

ROEE has become very common in Malaysia, with many government agencies and non-government organisations (NGOs) offering such programmes for supplementing environmental education in the formal curriculum. The Department of the Environment, the Ministry of Natural Resources and Environment, the Forest Research Institute Malaysia (FRIM), the Department of Wildlife and National Parks, city councils, and several members of Malaysian Environmental Non-Governmental Organisations (MENGO) are among the most active agencies that organise ROEE annually for school students. At the beginning of this study (January 2014) at least eight member organisations of MENGO had provided ROEE for school students. MENGO is a coalition of 26 registered organisations with a shared aspiration to ensure the continuity of the country's path towards sustainable development (MENGO, n.d.). In order to promote sustainable development, MENGO has identified key target areas for delivery such as community participation, environmental education and awareness, and information dissemination (Khelghat-Doost, 2011). As stated on their website, in order to achieve this objective, they adopt the following roles (MENGO, n.d.):

- (i) Collaborate and provide services to the Government, where appropriate, thereby complementing and supplementing the initiatives of the Government.
- (ii) Education and awareness raising on environmental concerns.
- (iii) Facilitate community mobilisation and participation around environmental issues.
- (iv) Empower ordinary citizens, including those from the grassroots in defending their environmental rights.
- (v) Contribute fresh insights into the environmental debate and advocate for improvements in environmental policy and legislation.
- (vi) Act as watchdogs in ensuring that the country genuinely embarks on a development model, which is environmentally sound and socially just.
- (vii) Promote the implementation of Agenda 21 and other appropriate international environmental agreements and conventions (<http://www.mengo.org/about-us/all-about-mengo>).

ROEE courses for Malaysian school students are organised in close proximity to so-called natural settings such as jungles, beaches, islands and mountainous regions (Asirvatham, 2009). The aim is to educate the students and teach them about the natural environment and its conservation (Asirvatham, 2009; Bhandari & Abe, 2000). In many cases, students who participate in ROEE courses are transferred from where they live to a residential setting deemed to be closer to nature. For example, the Sabah Wetland Conservation Society attracts students from across the state to engage with ROEE with a specific focus on wetlands conservation in Sabah's state capital, namely Kota Kinabalu (Sabah Wetlands, n.d.). Kota Kinabalu is located on a coast that has large areas of wetlands and is populated

by approximately 452,940 people (Department of Statistics, Malaysia, 2010). In this situation, some ROEE participants are transported from a different type of terrain (i.e. mountainous) to wetlands. It would appear, therefore, that the contrast between where participants normally live and their temporary relocation to an ROEE centre might create a degree of unfamiliarity between the ecological settings, although they are generally still in the same climate (Othman, Harun, Muda & Ismail, 2013). This threefold relationship between unfamiliarity, contrast and spatial movement are key to this investigation and are points to which I will return in the next section. A website search shows that many of the ROEE courses take the form of one-off weekend courses. However, Harun and Salamuddin (2014) suggest that some courses may last for five days.

#### **1.4 Rationale of study**

A growing body of literature has highlighted key characteristics of what makes ROEE courses effective for learning about the environment and sustainable development. Whilst this literature does not specifically focus on ROEE in Malaysia, it does provide the conceptual basis from which the educational practices of ROEE can be contextualised. For example, according to Gurholt (2008), Harrison (2010) and Palmberg and Kuru (2000), learning in nature could encourage people to commit to environmental activism through experiential engagement in nature. These researchers further argue that through deep, immersive practices people might learn to understand better the detrimental impact that humans have in their relationship with nature. The suggestion is that knowledge learned from such experiences is developed through affective engagement that develops very specifically from the interactions between those people with that place (Christie & Higgins, 2012; Semken & Freeman, 2008).

Investigating ROEE courses, therefore, presents an interesting empirical opportunity because theory suggests that unfamiliarity, contrast and spatial movement are central components of transformative education and, at the same time, the physical environmental settings of ROEE are different from the participants' daily surroundings. However, no research exists that specifically targets ROEE and so it remains uncertain if the unfamiliar venues that these settings in Malaysia represent can produce the learning outcomes and

environmental activism that Gurholt (2008), Harrison (2010) and Palmberg and Kuru (2000) describe (i.e. to encourage people to commit to environmental activism).

Interestingly, new work on authenticity by Beames and Brown (2016) and “Brilliant Residentials” by Kendall and Roger (2015), published after this study began, provide post hoc support for the rationale of studying ROEE in Malaysia because their residential settings are far removed from participants’ daily surroundings. Further details on these contributions are explained in Section 2.5, but for the moment it is important to point out that they both suggest that educational encounters based on unfamiliar, contrasting, and spatially specific approaches, such as the model adopted by ROEE in Malaysia, may result in learning that is less effective. According to Beames and Brown (2016, p. 51), “authenticity in education is concerned with learning that takes place in the real world and which can be usefully applied in everyday life”. The suggestion is that more effort is required to bridge the settings, content, methods, and learning outcomes with participants’ everyday life contexts. The contribution from the “Brilliant Residentials” research was to point out five criteria to make a residential experience exceptional (Kendall and Roger, 2015). This has been a useful framework to apply retrospectively to my own research setting because, as I will show, ROEE in Malaysia meets only one out of the five criteria (see **Section 2.5**).

Having identified potential problems with the educational offerings of residential education I wanted to adopt a methodology and research approach that sought to move beyond one-off effects to see if there were longer lasting effects. In adopting a constructivist grounded theory approach (Charmaz, 2006), the initial findings suggested that, although my research participants were able to report changes in attitude and behaviour, their ROEE experiences were not central to such changes. This finding led me to conclude that the self-reporting techniques I used had helped me to understand that, whilst changes were being reported, the data were not nuanced enough to explain context or time. In keeping with constructivist approaches I decided to extend my study and build on what I had found. I looked to Dewey’s (1938) concept of continuity and life history approaches (Uzzell, Gatersleben & White, 2010) to try to understand more about what happened over time from my respondents’ perspectives. My initial findings also suggested that the data I had collected regarding unfamiliarity, contrast and spatial movement were much more complex than the literature I had reviewed suggested. I therefore adopted the Transtheoretical model (TTM) (Prochaska, DiClemente & Norcross, 1992) which allowed me to frame my

analysis and capture comprehensively the participants' experiences from both psychological and social perspectives. A detailed justification for this decision is provided in the summary of **Chapter 2**.

### **1.5 Developing a research interest**

The rationale for the study is influenced by my personal interests, experiences and observations. My curiosity came from wondering whether ROEE courses were actually delivering what they claimed. Before I started this study, I worked as a research assistant for about six months at the Institute for Environment and Development in a university, after I had completed my Masters degree in Science Education at the same university. During my employment at the environmental institute, I was invited to observe two ROEE courses that were organized by a city council in collaboration with a local environmental NGO. Both of the ROEE courses involved participants from urban industrial areas. The first course brought primary school students to a coastal residential outdoor centre, while the second course was for secondary school students and took place at a residential outdoor centre in the jungle. Direct observation of the courses gave me insights into the types of teaching practices adopted in ROEE courses and I began thinking about how these compared to theories of environmental learning. It appeared to me that what was being taught might not be the same as what was being learned.

During the introductions for both courses, the organisers explained that the reason for selecting the participants to attend the free ROEE courses emerged from the organiser's concerns about what they called (and I paraphrase) 'the serious issue of open burning and waste management in the residential area of the participants'. The introductions also included statistical data that compared the number of cases of these practices in that area with other areas. However, by the end of the course I was struck by the fact that only one learning activity was directly relevant to the environmental issues addressed in the introduction to the courses (the participants were taught how to recycle papers on their own). I also noticed that the other activities were primarily about marine/rainforest ecology. It could be argued that deep, immersive experiences could lead to greater environmental awareness and activism. However the ROEE courses presented me with a real paradox. On the one hand they were promoting the notion of transferable learning by telling their

students that their experiences on these ROEE courses would have a direct relevance to their home lives; and on the other hand they appeared to be relying on the power of the experience itself to make the difference and not their own pedagogical practices. It also made me wonder how ROEE teachers would know if their teaching had been successful when the intended actions would take place after the programme had ended.

Additionally, while these observations had already made me question the ability of ROEE courses to encourage actions after the programme ended, I was alert to the fact that they were also supposed to supplement the environmental education that took place in the formal curriculum. My own observations indicated that no such connections were being made. I was informed by the organisers that post-learning assessment had never been part of their undertakings in the courses (although I cannot comment on whether such connections might have happened through teachers' or schools' initiative when participants returned to school). As briefly explained earlier in **Section 1.2**, ROEE is supposed to be teaching towards a sustainable development agenda in order to develop citizens who are informed and skilled in thinking and making their own decisions based on sound judgement in determining what counts as proper environmental behaviour (Ashley, 2005; Courtenay-Hall & Rogers, 2002). In summary, I had more questions than answers and, because of my Masters research, I knew there was no empirical study to help me to understand; rather, there were only theoretical concepts that were not really explanatory.

My interest in pursuing this study also has roots in my own personal childhood experiences. When I was 10 to 13 years old, my mother worked at a residential outdoor recreation centre, which was the centre often used for organising ROEE courses for school students. Many times, I unofficially joined the courses; however, I did not participate fully in the courses, but only in certain activities. By referring to my own recollections I am not able to assert with confidence that my environmental attitudes or behaviours were directly related to those experiences. Instead, what remains in my memories of those experiences are the adventurous elements that were enjoyable.

A combination of my own experiences, what I experienced during my Masters course, and an inherent curiosity, made me wonder if ROEE centres were really delivering what they claimed they were, which provided me with a compelling rationale for undertaking this research. Doing this study has allowed me to explore the extent to which ROEE centres in

Malaysia do, or do not, influence participants' environmental attitudes and behaviours towards the pursuit of sustainable development.

## **1.6 Research paradigm**

A research paradigm is commonly referred to as “a worldview” (Christ, 2013; Creswell & Clark, 2011; Guba & Lincoln, 1994), or the “higher level belief systems and the way these link with research questions” (Denscombe, 2008, p. 275). In this sense, paradigms play an important role in establishing liaison between research questions with research methods chosen for a study (MacKenzie & Knipe, 2006; Thomas, 2013). According to MacKenzie and Knipe (2006, p. 194), “it is the choice of paradigm that sets down the intent, motivation and expectations for the research”. This statement suggests that research questions can be examined from different perspectives.

There are several sets of assumptions that describe a research paradigm. Nonetheless, the most basic among them include constructivism and positivism (Bryman, 2012). The difference between constructivism and positivism (and other paradigms) is based on their ontology and epistemology. Ontology is the study of the nature of existence and what constitutes reality (Cohen, Manion & Morrison, 2007; Levers, 2013; Krauss, 2005; Savin-Baden & Major, 2013; Tuli, 2010). Whilst existence might be understood as the material world for the purpose of this study I am following Cohen et al.'s (2007) and Tuli's (2010) lead that this includes social phenomena. Epistemology refers to the nature of knowledge and the relationship between the knower and what is known. It is concerned with what knowledge means and how it can be acquired (Cohen et al., 2007; Krauss, 2005; Savin-Baden & Major, 2013; Tuli, 2010).

As I have pointed out, this study is based on a constructivism paradigm. The foremost reason for adopting constructivism is associated with the use of the TTM because both provide the opportunity to understand the complex social dynamics that I expected to encounter in ROEE courses in terms of teaching and learning and the development of environmental attitudes and behaviours. At its core, constructivism is a stance that celebrates the construction of knowledge through multiple-interpretations that embraces the multifarious and complex social realities of humans (Cohen et al., 2007; Johnson &

Onwuegbuzie, 2004; Ormston et al., 2013). Therefore, I believed that embarking on this study through the lens of social constructivism would provide the most suitable theoretical background in order to pose the research questions outlined as follows:

- i. What are the influences of ROEE courses on participants' environmental attitudes and behaviours?
- ii. How do participants' life experiences since the ROEE courses shape their environmental attitudes and behaviours?

These research questions were drawn from the arguments presented in previous sections of this chapter and literature review in the next chapter, which have led to an intuition that social aspects do have some bearings on impact of ROEE. In addition, this study is underpinned by a constructivist research paradigm as I was convinced about its potential in inductively developing a theory, principle, notion or idea (MacKenzie & Knipe, 2006). Therefore, although a theory on environmental attitude and behaviour development through Malaysian ROEE was unknown until this study started, I believed that constructivism could be a useful approach for researching the phenomenon. Furthermore, as a grounded theory approach is employed in this study, which will be thoroughly explained in **Section 3.4.2**, adopting a constructivist approach had another immediate appeal. Constructivist grounded theory is convincing because of its potential to entertain all conceivable explanations for the observed data and to interpret them in the most plausible ways (Charmaz, 2006; Roulston & Shelton, 2015).

In contrast, positivism was deemed inappropriate because, in comparison to constructivism, it celebrates a dissonant ontological and epistemological stance. Moreover, positivism's emphasis on the objectivity of reality and knowledge suggests that knowledge should be value free (Cohen et al., 2007; Gray, 2013; Johnson & Onwuegbuzie, 2004). Thus, positivism is more suitable for testing an existing theory through evidence that is believed to be an objective truth (Feilzer, 2010; Gray, 2013; Krauss, 2005; MacKenzie & Knipe, 2006; Punch, 2009).

The broad context for this study is explained in previous sections of this chapter. However, in order to explain the fact that this research reflects a constructivist paradigm (which affects the process and outcomes of this study), the critical literature review (Chapter 2)

suggests that social conditions play an important role in the process of learning and development of environmental attitudes and behaviours. Further detailed explanation of this is provided in **Section 3.4.2**.

## **1.7 Thesis structure**

My thesis comprises six chapters, including this introductory chapter which has introduced the key concerns that informed and shaped this study. The introduction has also included a brief account of my personal interest in this study.

In **Chapter 2**, a critical review of key theoretical ideas from the burgeoning body of literature that was reviewed throughout the course of this study is presented. The chapter begins by examining the concept of environmental education from international and Malaysian perspectives. It then discusses the theoretical concepts that are relevant to this research: ideas concerning the role of environmental education for environmental behaviour change and sustainable development; the theoretical concept of continuity of experience; a summary of the main influential factors that are proposed in a range of environmental behaviour models; and the Transtheoretical model (TTM) which framed the analysis of findings presented in the first Findings chapter. At the end of the chapter, I draw together the key issues raised in this literature and delineate the debates that have emerged, before presenting the research questions which have emerged from this critical review.

Having examined the literature critically, I then outline the research design and the methodological approaches that were adopted in this study in **Chapter 3**. The three key methodological approaches used in the study are, constructivist grounded theory, life history research and the TTM. Each is explained in turn, and detailed justifications are provided for my decision to use these approaches. A full account is provided of sampling decisions, data gathering approaches, data analysis, translation decisions, transcription, reflexivity, trustworthiness, generalizability, and important ethical considerations. The chapter concludes by summarising methodological decisions and demonstrating that I remained at all times aware of the limitations of the approaches adopted and of the steps that had to be taken to minimise such limitations.

The findings of this study are presented in two chapters, **Chapter 4** and **Chapter 5**, and justifications for this decision are provided at the beginning of **Chapter 4**. Underpinned by the life history theory and the TTM, **Chapter 4** presents the findings of the research in the form of vignettes. Using vignettes allowed me to capture each participant's environmental behaviour change over time, from both psychological and social perspectives, and four vignettes are presented in the chapter. The vignettes selected contrast with one other in the different ways that the four participants experienced the kinds of changes described in the TTM, and include what I have termed a 'relapser', a 'maintainer', a 'transcender' and a 'non-changer'.

**Chapter 5** presents the findings from the detailed and fine-grained thematic analysis that was centrally informed by kinds of inductive, deductive and abductive reasoning which characterises a constructivist grounded theory approach. Nine key binary themes emerged from the analysis. However, only six of them are presented in this chapter: two new binary themes (i.e. conforming/transforming action; compulsory/optional action) and four existing binary themes (i.e. direct/indirect action; public/private-sphere action; activist/non-activist action; and biospheric/anthropocentric-oriented action). The rationale for this decision, and the selection of these binary themes for presentation, are explained in the chapter.

Finally, **Chapter 6** draws together the key findings from this research, provides answers to each of the research questions, and considers the conceptual, methodological and practical implications of the study. This discussion concludes by presenting a model which builds on previous psychological conceptualisations of the process for performing pro-environmental actions. It reconceptualises this process with the inclusion of the important social aspects of action which emerged throughout the data analysis stages and which are discussed in each of the two Findings chapters. Finally, attention turns to the limitations of this study, and recommendations for the future direction of research are suggested.

## Chapter 2      REVIEW OF LITERATURE

### 2.1 Chapter Overview

Literature was reviewed at different stages of this study. As the study adopted a grounded theory approach (detailed explanations are provided in **Chapter 3**), this chapter only provides the background on the topics that are relevant to the sensitising concept, which was “constructed to fit the particular problem on which one is working” (Blumer, 1956, p. 684), and also that led to the formulation of research questions. This chapter is divided into seven sections. The first presents the concept of environmental education from an international perspective and the second reviews the literature available on the Malaysian perspective. The review then provides an overview to show how scholars and their research see the potential of environmental education to bring about behavioural change, specifically in relation to the increasingly prominent term ‘sustainable development’. The fourth section presents literature relating to Dewey’s (1938) concept of continuity of experience; this was necessary because as the data emerged from interviews my respondents, without prompting, appeared to be referring to this concept, a point to which I will return. The fifth section outlines a summary of the main influential factors (i.e. psychological and situational factors) that are proposed in a range of environmental behaviour models that have direct relevance to my own research. From this summary, the sixth section presents the Transtheoretical model (TTM), which is important because it has been used as a theoretical framework for analysing data in this study. The final section provides a summary account of the literature reviewed. The summary will indicate that three themes emerged from the literature, namely Education for Sustainable Development (ESD), continuity of experience, and environmental behaviour change. These themes help to show how the literature relates to my own thesis. The section finishes with me identifying gaps in the literature, which subsequently led to the formulation of research questions.

## 2.2 Environmental Education from international perspectives

This study explores the influence of ROEE on Malaysian participants' environmental attitudes and behaviour. As this study regards the purpose of ROEE courses to be to educate school students about the environment, it is relevant to begin this chapter with a presentation of the concept of environmental education within an international context. This is because the concept of environmental education is multifaceted, culturally nuanced and not easily captured in any one definition. The start of this section presents the concept according to its chronology of development beginning in the early 1970s. The purpose of this review, continued in later sections, is to describe the various themes that have already emerged and to identify gaps in the literature for this study to target.

There are many events that influenced the development of environmental education. Here I focus on three that are frequently cited in the literature as seminal. One of the earliest references to the term 'environmental education' took place in the Conference on the Human Environment held in Stockholm in 1972. This United Nations conference, convened by the General Assembly, sought to broaden and deepen its definition and simultaneously internationalise its use by involving leaders from a range of countries. This resulted in an ambitious action plan which became known as The Stockholm Declaration. The declaration sought to involve governments and communities around the world to engage with and shape the future of global environmental and developmental needs (Handl, 2012; Sohn, 1973; United Nations, 1972). A specific role for education was outlined in Principle 19, which stated:

Education in environmental matters, for the younger generation as well as adults, giving due consideration to the under privileged, is essential in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension. It is also essential that mass media of communications avoid contributing to the deterioration of the environment, but, on the contrary, disseminates information of an educational nature on the need to protect and improve the environment in order to enable man to develop in every respect. (United Nations, 1972, p.5)

A second important milestone on environmental education can be found in the historic Belgrade Charter and its Final Report produced in 1975. In this document, the purpose of environmental education was said to be concerned with developing citizens who,

individually and collectively, are committed to finding solutions to environmental problems (McKeown & Hopkins, 2003).

Subsequent to the Stockholm Conference and Belgrade Charter, the third event I will focus on took place in Tbilisi, USSR in 1977, which was advertised then, and referred to now, as the first intergovernmental conference on environmental education. It was organised by the United Nations Education, Scientific, and Cultural Organisation (UNESCO) in cooperation with the U.N. Environment Programme (UNEP). According to the final report of the conference that was prepared by UNESCO (1978), the purpose of the conference was to raise awareness of environmental problems that were emerging as a result of extraordinary scientific, technological and social development issues globally.

To sum up, these three seminal events – i.e. the Stockholm Conference, the International Workshop and Belgrade Charter and the Tbilisi Conference – were critical stages in the development of environmental education by enhancing its international status. Furthermore, they provided arguments that people from all walks of life should be involved in a lifelong process of learning, either at school or as part of a professional training programme. And, it was said that the learning should be practically oriented to guide people to make wise decisions with a concern for immediate and future actions.

Whilst these documents attempted to broaden of the concept of environmental education, it remained too narrow for some commentators. For example, Kopnina (2012a), Kopnina and Meijers (2014), McKeown and Hopkins (2003) and Sauvé (2005) point out that any definition needed to include the web of socio-economic activity and how humans interact with the environment. They were arguing for a shift from something that might be considered to be 'green' (Baczala, 1992) involving educational practices such as nature, rural or field studies to a form of education that includes social, political and economic aspects in its content (Palmer, 2002).

This changing emphasis saw a change in nomenclature in the UNESCO sponsored agenda where the term 'environmental education' began to be replaced by the term 'Education for Sustainable Development (ESD)' (United Nations General Assembly, 1987). Just as Palmer (2002) described the increasing scope of environmental education, the inclusion of the word 'development' was intended to promote a form of education that sought to

emphasize the global nature of environmental issues and problems. Furthermore, development from a global perspective could not proceed as if the environment was somehow separate from economic development, but socio-economic activity and the environment (both local and global) were inextricably entwined, and thus the task became to develop a form of education that had at its heart the relationship between nature and people (Hopwood, Mellor, & O'Brien, 2005). Following this shift of interest, the concept of sustainable development was described as consisting of three main objectives (International Union for Conservation of Nature, Natural Resources & World Wildlife Fund, 1980):

- i) Maintenance of essential ecological processes and life-support systems
- ii) Preservation of genetic diversity
- iii) Sustainable utilization of species and ecosystems

The World Conservation Strategy (WCS) provided the basis for an intellectual framework but also acted as practical guidance for conservation actions (International Union for Conservation of Nature, Natural Resources, & World Wildlife Fund, 1980). It called on leaders across the world to implement the proposed action plan at local and international levels. Generally, the action plan was described as comprising what has become known as 'the triple bottom line', comprising three pillars, namely economic, social and environment (McKeown & Hopkins, 2003).

Education for Sustainable Development (ESD) has become one of the strategic vehicles to address the triple bottom line and reorient learning for a more sustainable world (Taylor, 2014). The role of education follows from the view that:

Sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. We need to change the way we think and act. This requires quality education and learning for sustainable development at all levels and in all social contexts. (UNESCO, 2015)

Whilst it is clear that this discourse has had a major impact on nomenclature in this domain, some scholars have resisted what they refer to as a UNESCO sponsored agenda. These scholars suggest instead that it is more important to consider the purpose, focus and function of education. For example, Palmer (2002) uses illustrative models and suggests that learning can be considered as environmental education if any one or more of the

following three strands is included. The first is education through the environment, the second is education about the environment, and the third is education for the environment. She suggests that education through the environment (often outdoors, place-based and experiential) involves the use of the environment as a medium or a source of stimulation for learning subjects, skills and abilities. Education about the environment refers to the sorts of theoretical learning that take place through a class-based setting when studying subjects such as science, geography and history. The third category, education for the environment, is about the conservation and improvement of the environment as a goal of education (Palmer, 2002). Nicol (2001) has pointed out that this tripartite model has been the source of heated debate within the literature, particularly the use of the word 'for' because of its normative associations and the ideological differences that arise when the purposes of education are discussed, a point to which I will return in **Section 2.4** below.

Key to this debate is defining clearly what is meant by the word 'environment' (Palmer, 2002). However, as I have shown above it is not limited to the so-called 'green environment' (Baczala, 1992), commonly understood as ecosystems or the biosphere. For example, the Belgrade Charter stated clearly that environmental education should consider the environment in its totality. The word 'totality' is key here because it is meant to include both natural and man-made (*sic*) elements such as ecology, politics, economics, technology, society, legislature, culture and aesthetics (UNESCO, 1975). Smyth (1998, p. 1) has taken a similarly expansive view, stating that the environment consists of something 'physical and biological, human and nonhuman, natural, cultivated and constructed, social and political, cultural and aesthetic, and temporal with a past and future'.

More recently the issues of overcoming poverty, health promotion, gender equality, environment, cultural diversity, rural development, peace and human security and sustainable urbanization were targeted in the United Nations Decade for Education for Sustainable Development (2005–2014) (UNESCO 2006). The UN follow up to this is known as the Sustainable Development Goals (SDGs) established in January 2016. The SDGs outline 17 specific goals towards sustainable development for fifteen years from 2016 until 2030 (see the full list of goals in **Appendix A**). The SDGs place an even greater emphasis on the social aspects of development (Waage et al., 2016) than the earlier definitions I have referred to. This is because the SDGs follow the developing international trend to regard the environment much more holistically as described above. This has been captured in

Goal 4 of the SDGs which features education as a high priority (Vladimirova & le Blanc, 2016). There is a specific challenge for education to address social well-being to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (UNDP, 2016, para 2).

Given the extended scope of sustainable development in the SDGs, it seems that the agenda of ESD has slowly changed emphasis over time. It is understandable therefore that the concept of environmental education has undergone change. This has been noted by Jickling and Wals (2008) who have pointed to the growth of studies that relate environmental education with social inequity. It is also important to point out that the increasing plurality of ESD reveals further disparity in ideas and beliefs amongst researchers and practitioners. This has important implications for my own study and is something to which I will return in **Section 2.4**.

Some time ago Sauv  (2005) developed an educational response that attempted to take account of these emerging patterns. She presents a 15-point list of ‘currents’ in environmental education literature. By currents, Sauv  (2005, p. 12) is referring to “a general way of envisioning and practicing environmental education”. The full list of currents, their aims, dominant approaches and examples of strategies are presented in **Table 2.1**. Out of these 15 currents, systemic, humanistic/mesological, value-centered, bioregionalist, praxic, social critical, and sustainable development/sustainability are relevant to this study. The first three currents (i.e. systemic, humanistic/mesological, value-centered) are from the category of currents with a longer tradition in Environmental Education, while the other four currents (i.e. bioregionalist, praxic, social critical, and sustainable development/sustainability) are defined as emerging currents at that time. According to Sauv  (2005), having these two categories does not make the currents with a longer tradition outmoded. They are still relevant in the present day. In addition, all of the 15 currents are not unrelated as they may have overlapping positions (Sauv , 2005). Importantly Kopnina (2012a) points out Sauv ’s (2005) 15 currents reinforces the view that there has been a transition in terminology from environmental education to ESD. These currents are also useful because distinctions can be made between the environment as something naturalist, systematic, scientific, value-centred, or something to be used as a shared resource for economic development or something from which sustainable living might arise. I will return to this point in the later sections in this chapter.

**Table 2.1** Sauvé's (2005, p. 33-34) summary of characterisation of Environmental Education currents

<b>Currents</b>	<b>Conception of Environment</b>	<b>Aims of Environmental Education</b>	<b>Dominant Approaches</b>	<b>Examples of Strategies</b>
Currents with a longer tradition in Environmental Education				
Naturalist	Nature	Reconstruct a link with nature.	Sensorial, cognitive, affective, experiential, creative/aesthetic	Immersion; interpretation; sensorial games; discovery activities
Conservationist/ resourcist	Resource	Adopt behaviours compatible with conservation. Develop skills related to environmental management.	Cognitive, pragmatic	Guide or code of behaviours; 3 Rs set of activities; environmental audit; conservation project
Problem-solving	Problem	Develop problem-solving skills: from diagnosis to action.	Cognitive, pragmatic	Case study: issue analysis; problem-solving project
Systemic	System	Develop systemic thinking: analysis and synthesis, toward a global vision. Understand environmental realities in view of enlightened decision-making.	Cognitive	Case study: environmental system analysis; construction of ecosystem models
Scientific	Object of study	Acquire knowledge in environmental sciences. Develop skills related to the scientific method.	Cognitive, experiential	Study of phenomena; observation; demonstration; experimentation hypothetico-deductive research activity
Humanistic/ mesological	Living milieu	Know and appreciate one's milieu of life; better know oneself in relation to this living milieu. Develop a sense of belonging.	Sensorial, cognitive, affective, experiential, creative/aesthetic	Itinerary; landscape reading; study of milieu; investigation
Value-centred	Field of values	Adopt eco civic behaviours. Develop a system of ethics.	Cognitive, affective, moral	Analysis of values; clarification of values; criticism of social values
Currents more recently emerged in Environmental Education				
Holistic	<i>Holos, Gaia</i> , all, the being	Develop the many dimensions of one's being in interaction with all aspects of the environment.	Holistic, organic, intuitive, creative	Free exploration; visualisation; creative workshops;

		Develop an “organic” understanding of the world and participatory action in and with the environment.		integration of complementary strategies
Bioregionalist	Place of belonging. Community project.	Develop competencies in/for local or regional community eco development.	Cognitive affective, experiential, pragmatic, creative	Exploration of our shared milieu; community project,; project of local or regional eco-development
Praxic	Locus of action/ reflection	Learning, by, and for environmental action. Develop reflexive skills.	Praxic	Action research; reflexive posture in activities or project
Socially critical	Object of transformation, place of emancipation	Deconstruct socio-environmental realities in view of transforming them and transforming people in this process.	Praxic, reflexive, dialogic	Analysis of discourses; case study, debate, action research
Feminist	Object of solicitude	Integrate feminist values into the human-environment relationship.	Intuitive, affective symbolic, spiritual, creative/aesthetic	Case study, immersion, creative, workshop, communication, and exchange activity
Ethnographic	Territory, place of identity, nature/culture	Recognize the close link between nature and culture. Clarify one’s own cosmology. Valorise the cultural dimension of one’s relationship with the environment.	Experiential, sensorial intuitive, affective, symbolic, creative	Fables, stories and legends; case study; immersion; modelling; mentoring
Eco-education	Role of interaction for personal development, locus of identity construction	Experience the environment to experience oneself and to develop in and through it. Construct one’s relationship with the “other than-human world”.	Experiential, sensorial, intuitive, affective, symbolic, creative	Life story; immersion; exploration; games; introspection; sensitive listening; subjective/objective alternance
Sustainable development/ sustainability	Resource for economic development, shared resource for sustainable living.	Promote economic development that takes care of social equity and ecological sustainability; Contribute to such development.	Pragmatic, cognitive	Case study’ social marketing; sustainable consumption activities; sustainable living management project

The seven currents of environmental education (i.e. systemic, humanistic/mesological, value-centered, bioregionalist, praxic, social critical, and sustainable development/sustainability) are relevant to this study for several reasons. The first, as was explained in **Section 1.4**, is specific to this study which concerns the unfamiliarity, contrast and spatial movement of students from one place to another that are adopted in Malaysian ROEE provision. These situations meet the description of humanistic/mesological, bioregionalist, praxic, and socially critical currents.

The second reason is the way in which systemic, humanistic/mesological, value-centered, bioregionalist, praxic, social critical, and sustainable development/sustainability currents explain the changes observed in the literature that I reviewed and how these international perspectives might affect the Malaysian context of my own research. This is something to which I will return in **Section 2.3**.

The third reason is data driven. This is something that I will deal with as the thesis proceeds but for now, and in this section pertaining to a literature review, it is important to point out that literature is used in different ways throughout this thesis and that this is consistent with adopting inductive, deductive and abductive reasoning throughout this study (see Chapter 3 Methodology).

In this section, a general overview of the concepts of environmental education, its relevance to ESD, and the desired directions of environmental education from an international perspective have been presented. Based on the literature reviewed, it seems that environmental education evolved into ESD. Out of this wide concept of environmental education, the current study is interested in focussing on the issue of behaviour change in promoting sustainable development.

### **2.3 Environmental Education in the Malaysian context**

Environmental education in the Malaysian context is not without its own tensions and complexities. In this section, I review environmental education within this national context and note some challenges that stand in the way of its implementation in the country. The review provides some background information regarding the policy and practice of ROEE

that will help illustrate the research context. This information is presented chronologically and I will show that there are similarities with the previous section in that the concept of environmental education within Malaysian is changing.

The history and emergence of environmental education in Malaysia can be traced back to 1986, when a specific curriculum called Mankind and the Environment (*Alam dan Manusia*) was introduced. From a methodological perspective, the historical background has been informed by grey literature in the form of historical archives and written up in the form of a documentary analysis. The details of how this analysis was conducted is presented in the next chapter, particularly in **Section 3.4.5.1**.

Following its independence in 1957, up to the 1970s, Malaysia felt the after-effects of its break from colonialism in the form of unbalanced socio-economic development between its regions and races (The Economic Planning Unit Malaysia, EPU, 1955; 1960; 1965, 1970). This imbalance was so critical to the state of the country at that time that it contributed to the race riots of 1969. Therefore, the ultimate goal of the government during that time was to ensure equal levels of socio-economic development in each state and to restore the imbalance between the socio-economic statuses of various ethnic groups (EPU, 1970). Economic income, however, was largely derived from activities that resulted in environmental degradation.

... It is vital that the objectives of development and environmental conservation be kept in balance, so that the benefits of development are not negated by the cost of environmental damage... There are many dimensions to the environmental problem. They include increases in the amount of pollutants released into the environment; rapid exploitation of land and natural resources without due regard to ecosystem conservation; and growing congestion in urban areas with the attendant problems of transportation, waste disposal, provision of utilities and noise and visual pollution... (EPU, 1975, p. 218)

An environmental agenda was thus explicitly incorporated in the national plan via the inclusion of a specific chapter (i.e. Chapter 11, Development and the Environment) in what became known as the Third Malaysia Plan (although activities focusing on economic development remained the plan's ultimate goal (EPU, 1975). The Environmental Quality Act and the Department of Environment within the Ministry of Science, Technology and Environment were also established during the same period of 1974–75. Given this range of

initiatives, and with the benefit of hindsight, the timing was right for the government to markedly shift its policies by putting environmental protection on a par with economic and social development. Additionally, this movement was co-incidental with the declaration of the Stockholm Conference that took place around the same time.

Consequently, a proposal was made to deliver environmental education through both the media and institutions. This was the first sign of progress in Malaysian education. The main focus of the plan, however, appeared to be out-of-school activities. For example, when the chapters on Development and the Environment and Education and Training are reviewed and compared (Chapter 22), no links are made in the documents regarding how environmental education was to be developed and delivered in school settings. Instead, the plan for education and training in the Third Malaysia Plan was geared to equipping young people with the knowledge and skills required to meet the need for a skilled workforce in order to effectively participate in the development of the economy (EPU, 1975).

The early effort to implement environmental education in Malaysian schools became apparent with the 1986 trial of a new subject, Mankind and Environment, at primary level (Said, Yahaya & Ahamadun, 2007). This was formally introduced three years later, in 1989. At secondary level, instead of environmental education being taught discretely, teachers were urged to educate students about the environment through the broader geography and science curricula (The Centre of Curriculum Development Malaysia, 1989). Mankind and Environment was a curriculum specifically intended to deliver knowledge, perception and positive attitudes towards the environment in a holistic manner. The approach adopted was one of combining elements of science, technology, history, geography, health, civics and environment, thereby replacing the previously separate geography, history and science curricula (Bhandari & Abe, 2000; Chelliah, 1992; Said et al., 2007). According to Ahmad (1998), the aim was to replace the former geography, history and science curricula, which as a whole were felt to be too heavily content-oriented.

However, the inclusion of so many elements in the new curriculum meant that the content was considered too dense and excessively burdensome (Chelliah, 1992). Consequently, environmental education was discontinued as a single subject after five years and replaced by Science and Local Studies (Syed Idros, 2006). At first glance, this decision seems surprising because the United Nations had, in 1992, just released Agenda 21. Agenda 21 is a

proposal aimed at getting people from all walks of life involved in sustainable development at both a global and local level in the 21<sup>st</sup> century (Aminrad et al., 2012). However, the agenda was to be initiated by local governments (United Nations, 1992, paragraph 1.3). As stated in the original document:

Agenda 21 addresses the pressing problems of today and also aims at preparing the world for the challenges of the next century. It reflects a global consensus and political commitment at the highest level on development and environment cooperation. Its successful implementation is first and foremost the responsibility of Governments. National strategies, plans, policies and processes are crucial in achieving this. International cooperation should support and supplement such national efforts...

In Chapter 36 of the Agenda – dedicated specifically to the plan for promoting education, public awareness and training – education (including formal education) is described as an important medium in reorienting education towards sustainable development (United Nations, 1992). In order to achieve this objective, this chapter proposed that,

A thorough review of curricula should be undertaken to ensure a multidisciplinary approach, with environment and development issues and their socio-cultural and demographic aspects and linkages. Due respect should be given to community-defined needs and diverse knowledge systems, including science, cultural and social sensitivities. (United Nations, 1992, paragraph 36.5b)

It is explicitly stated in the paragraph above that measures to educate people about the environment should be conducted through curricula. Therefore, the abolishment of Mankind and Environment in 1993 may give the perception that environmental education has been neglected in formal education. However, a more flexible approach for teaching environmental education was essentially introduced later, in 1998. Since then until now, school teachers have been encouraged to integrate environmental education in their teaching across curricula. In fact, the Centre of Curriculum Development provided a handbook for guiding and supporting teachers in implementing the proposal (Centre of Curriculum Development, 1998). This approach is in line with the approach recommended in the Final Report of the Tbilisi Conference, where interdisciplinarity is suggested as a means to integrate environmental dimensions into each subject without repudiating the integrity of the nature of the core curricula (UNESCO, 1978). This approach provides the means by which environmental education may be taught widely in every school curriculum.

In addition, this approach also seems to have the potential to show students the relevancy of the environment in various subjects and from different perspectives, which consequently suggests that the desired outcome of Agenda 21 to involve the whole citizen in pursuing sustainable development is very likely to be achieved. Therefore, despite the strong movement in the national educational system and curriculum, the changes made to its implementation can be seen as a reasonable decision.

The objective of environmental education outlined in the handbook of environmental education across the curriculum is to promote the development of environmental knowledge, awareness, attitudes, skills and participation in environmental actions (Centre of Curriculum Development, 1998). Later on, the Malaysian Department of the Environment and the Centre for Environment and Development of the National University of Malaysia (2004) define environmental education as necessary for students to develop an understanding of the interaction between human beings and the environment and that the environment should be managed wisely and responsibly towards more sustainable ways of living. This is in line with Yusoff's (2003, p. 77) definition of environmental education as something that:

...finds its legitimacy as an effective instrument for creating consciousness of ecological balance by maintaining that development need not necessarily degrade the natural environment. Environmental education holds that sustainable development is possible and warns against indiscriminate development that disregards ecological balance.

Note how similar the definitions of environmental education by the Malaysian Department of Environment and the Centre for Environment and Development of the National University of Malaysia (2004) and Yusoff (2003) are with the international concepts of ESD presented in the previous section.

Even though environmental education has been implemented through the Malaysian school curriculum since the late 1990s, it does not seem to be very effective as it appears to lack the ability to fully develop students' potential (Haimi Adnan & Smith, 2001). Many studies report that the Malaysian citizens' (at all levels: students', youth and adult) participation in environmental conservation is still low or moderate although they are aware of the environmental issues or problems that are happening around them. For

example, the study by Ahmad et al. (2012) that was conducted among young people aged between 18-25 years old reveals that some of them acknowledged that they did learn something about the environment in school. However, this study shows that not only was their participation in environmental activities inconsistent, but they also did not intend to influence others towards more pro-environmental behaviours as they did not want to meddle in other people's business and offend them.

One possible explanation for this is that the environmental curriculum planned by the Centre of Curriculum Development (1998) appears to have been neglected. The cross-curriculum approach is not compulsory – it is up to individual teachers to integrate or not to integrate environmental education in their teaching (Nadeson & Abdul Rasid, 2004; Syed Zakaria & Halim, 2009). Perhaps this happened because there was no strict enforcement. Whatever the reason, Ahmad's (2008) study indicates that there has been little teaching about the environment among Malaysian teachers. Instead, the core content of the curriculum – the subject content contained in the textbooks and syllabus – has been prioritized (Ahmad, 2008).

According to Pudín, Tagi and Periasamy (2005), the reason behind the low level of environmental education in teaching practice is that the handover of the guidelines prepared by the Centre of Curriculum Development was impeded. Their study reports that many headmasters did not circulate the guidebook with which they were entrusted to their subordinate teachers (Pudín et al., 2005). According to Khalid et al. (2011), it was because the headmasters appeared not to be aware of the need for the implementation of environmental education at their schools. Hwang and Embi (2007) and Othman (2009; 2014) think that another possible reason is that teachers were, and remain, more focused on preparing students for examinations since the educational system in Malaysia is very exam-oriented. This is especially so because there are no indicators, standards nor formal evaluation for assessing the effectiveness of environmental education integrated into the curriculum. Furthermore, there was no real attempt to relate what the students learnt in school to their lives outside of school (Nadeson & Abdul Rasid, 2004; Syed Zakaria & Halim, 2009). Consequently, as these authors suggest, the implementation of environmental education in the school curriculum only depends on those subjects that are directly related to the environment such as the subjects of science and geography.

This situation is problematic since the evidence suggests that environmental-related content in the curriculum is limited. For example, whilst the science curriculum would appear to be rich in potential for teaching environmental education, research found very few environmental-related topics (Ahmad et al., 2012; Syed Abdullah, Halim & Mohd Sahali, 2011; Syed Zakaria & Halim, 2009). So, if environmental education merely depends on the environmental-related topics in the school curriculum, problems in the implementation of environmental education across the curriculum may indeed be expected. The fact that very little appears to be happening in formal educational settings is one reason why I am interested in looking at non-formal settings to explore the extent to which these might supplement and cover these curricular omissions.

## **2.4 Environmental Education for environmental behaviour change and sustainable development**

In the previous two sections, the concept of environmental education from international and Malaysian perspectives were presented. Although I have shown that there remains much to be done to develop environmental education in the school curriculum, it is clear from the meta-narratives that I have presented that Malaysia shares the international ambition to encourage people to make the act of sustainable living a daily part of their way of life, whereby conservation of the natural environment becomes part of their everyday lives (Arbuthnott, 2009; Haigh, 2006). Conservation has been described as the management of human use of the biosphere that embraces preservation, maintenance, sustainable utilization, restoration, and enhancement of the natural environment (International Union for Conservation of Nature, Natural Resources, & World Wildlife Fund, 1980). Consequently, encouraging environmental behaviour change in targeting pro-environmental behaviour and subsequently sustainable development has become a desired outcome of environmental education (Dobson, 2007; Handl, 2012). Environmental behaviour change, however, is not a new topic. As I have shown it has been discussed since at least the 1970s. Since then, many models have been introduced to explain why individuals may or may not change their behaviour. I expand on these in **Section 2.6** but focus in the following paragraphs on literature relevant to the relationship between environmental behaviour

change, potential outcomes associated with ESD, Malaysian environmental education and my own research setting, ROEE.

Many scholars have cautioned against positioning environmental behaviour change as the ultimate outcome of environmental education and ESD. This argument rests on the assumption that this outcome is fundamentally more susceptible to learning based on indoctrination (Ashley, 2005; Courtenay-Hall & Rogers, 2002; Dobson, 2007; Jickling & Wals, 2008; Wals, 2011). Where behaviour change becomes the goal, they remain concerned that the key processes of learning and the motivations for doing so could become subverted (Courtenay-Hall & Rogers, 2002; Dobson, 2007). According to Jickling and Wals (2008), such an idea treats education as being essentially transmissive. By 'transmissive' they mean that environmental behaviours are produced based on a set of facts, skills, and values that are engineered by governments, special-interest groups, or industry, which have preferred messages, agendas, ideologies, or consumer preferences (Jickling & Wals, 2008).

One further factor is of interest to my research. There is now a very large body of literature that suggests people rarely change their behaviour in response to a rational call to do so (Vare & Scott, 2007). This further identifies weaknesses in transmissive approaches because the literature also suggests that knowledge and understanding alone are not sufficient to lead to a commitment to action for sustainability (Ashley, 2005; Wals, 2011). As I will go on to show, perhaps this explanation justifies why countries perceive very differently the goals and processes of EE and ESD (Kopnina, 2012a). Furthermore, as my thesis develops I will be paying attention to the need for critically informed education to avoid the Deweyian notions that otherwise education can be both 'un-educative' or worse 'mis-educative' or, in the view of Jickling and Wals (2008), worse still when it becomes indoctrination.

The critique on the appropriateness of making environmental behaviour change and developing pro-environmental actions the ultimate outcome of environmental education in general was supported by some of the 50 invited experts from 25 countries who registered for an international, on-line debate on education for sustainable development in Gland, Switzerland, which was called ESDebate. According to them, such pre-determined educational outcomes would leave less space for reflective self-determination about educational outcomes and autonomous thinking; and exploration of more contextual

pathways towards a better world might be hindered (Courtenay-Hall & Rogers, 2002; Jickling & Wals, 2008). Due to this notion, Ashley (2005), Bowler (2015), Jickling and Wals (2008), Scott (2009), and Tilbury (2009) all posit that it is important to teach people about how to think, which celebrates a transformative approach.

The idea that they put forward when proposing a transformative approach in environmental education is that the environmental behaviour that is produced is the result of social reproduction, social efficiency and confrontation towards global injustice, which involve proper judgment to decide which environmental values are right or wrong in certain circumstances (Ashley, 2005; Jickling & Wals, 2008). For example, from one point of view, recycling has been described in many studies (e.g. De Leeuw et al., 2015; Thomas & Sharp, 2013; Whitmarsh & O'Neill, 2010) as a pro-environmental action that we should promote to others. However, as Hopewell, Dvorak and Kosior (2009, p. 2116) explain, "the amount of material going into the waste-management system can, in the first case, be reduced by actions that decrease the use of materials in products". Based on this opinion, perhaps it is arguable that, by supporting the action of recycling, we are condoning actions that may paradoxically reinforce miseducative behaviour because in terms of lifecycle analysis it would be better to reduce consumption of the materials in the first instance.

Vare and Scott (2007) provide some guidance here as they distinguish between transmissive and transformative environmental education. The former, which they call ESD 1, is seen as promoting "informed, skilled behaviours and ways of thinking", while the latter, which they call ESD 2, promotes "building capacity to think critically about [and beyond] what experts say... and exploring the contradictions inherent in sustainable living" (Vare & Scott, 2007, p. 3-4). Whilst they thought that both ESD 1 and ESD 2 are important, Vare and Scott (2007) also asserted that ESD 2 is more important.

ESD 2 not only complements ESD 1, it makes it meaningful, because our long term future will depend less on our compliance in being trained to do the 'right' thing now, and more on our capability to analyse, to question alternatives and negotiate our decisions. (Vare & Scott, 2007, p. 5)

According to Scott (2009), people would experience more fundamental changes in their lives if they were involved in rational judgements and debates about what is happening in the wider world. In fact, Tilbury (2009) suggests that richer educational experiences come

from challenging existing mental models, policies and practices, not simply accommodating them. Critical judgement has been thought of as crucial to understanding social patterns that are change resistant. Dobson (2007) suggests that when pro-social and pro-environmental attitudes coexist, it is more likely that people will act (Dobson, 2007). In contrast, when attitudes and behaviours are driven by deep structures that suggest a particular change in behaviour without critical judgement, at any time the changes in behaviour may regress. Dobson (2007) offers an explanation of this situation in which he tells of how fiscal incentive has successfully encouraged a reduction in the use of private vehicles in Durham and reduced plastic bag use in the Republic of Ireland within a week. However, according to him, if this motivation of fiscal incentive is removed, it is possible that people would go back to their original and unsustainable behaviour.

Based on this idea, Ashley (2005), Courtenay-Hall and Rogers (2002), Dobson (2007) and Tilbury (2009) suggest that, instead of aiming to develop specific forms of environmental behaviour, environmental education should aim to develop environmental citizenship or thinking citizens. 'Thinking citizens' refers to those who are able to think and make their own decisions based on sound judgement in determining what counts as proper environmental behaviour (Ashley, 2005; Courtenay-Hall & Rogers, 2002). In comparison, environmental behaviour which is transmitted uncritically or through indoctrination may result in people believing content without due regard to evidence, or contrary explanations, or through interpreting scientific evidence carelessly (Ashley, 2005; Mappin & Johnson, 2005).

By aiming to develop environmental citizenship, the resulting environmental behaviour is not limited to any single individual and transcends the parameters of the private sphere as people would have the potential to acquire skills to influence change within a system, organization or wider society (Tilbury, 2009). The underlying idea is that the duty of the environmental citizen is to live sustainably so that others may live well, which accordingly suggests that it is more important to develop attitudes and not just influence specific behaviour (Dobson, 2007). Environmental citizenship involves the development of attitudes which require sensitivity and embracing the complexity of how nature works, how participative learning might be effective and how a progressive circular, social economy is evolving (Huckle 2012; Meyers, 2006). As a result, attendance to attitude is believed to lead to more secure and long-lasting behaviour changes (Dobson, 2007). What Dobson (2007) is

challenging is that behavioural changes necessarily lead to attitudinal change, and not paying attention to attitudes allows the possibility of non-education, mis-education and indoctrination to occur.

#### **2.4.1 Orientations for performing environmental actions**

Advocates of transformative education argue for the need to perform environmental actions through judgement in deciding if the actions are right or wrong in certain circumstances (Ashley, 2005; Jickling & Wals, 2008). This of course raises questions over the nature of right and wrong and who decides which is which. The example of recycling in **Section 2.4**, shows how important critical discussion is where a right/wrong dichotomy merely raises more questions.

Based on the literature of ESD reviewed, I found that one of the ways we may distinguish between right and wrong actions is through comparison of the concepts of biospheric and anthropocentric-oriented actions. As I will show the difference between these offers some important insights because of the way in which they are described in the literature. Also, as I will explain later these different orientations of environmental action became one of the striking thematic findings of this study.

In reviewing the concept of environmental education and its relationship to ESD in previous sections, two seminal events stand out because they promoted the need for critically informed environmental education – i.e. the Stockholm Conference and the Tbilisi Conference. More specifically they emphasised the need to educate people about the environment and associated social problems, and for people to adopt behaviours compatible with these concerns (Handl, 2012; Sohn, 1973; United Nations, 1972; UNESCO, 1978). In comparison, it is interesting to point out that in the literature on ESD and more recently the SDGs, the conception of the environment has both broadened and deepened in relation to the inter-play between economics, social aspects and the importance of sustainable living. There is a paradox in that authors warned against this happening when ESD was first introduced for fear that it would become nothing other than an economic commodity (Kopnina, 2012a; Kopnina & Meijers, 2014; McKeown & Hopkins, 2003; Palmer, 2002; Sauv , 2005). On the one hand some literature suggests that the environment is

instrumental, and centre-stage in helping to achieve the goals of ESD (e.g. Gurholt, 2008; Harrison, 2010; Palmberg & Kuru, 2000; Palmer, 2002). On the other hand, the literature on environmental values and motivation (e.g. De Groot & Steg, 2008; Lee, 2011; Kopnina, 2011) suggests that environmental actions might not be performed due to a concern about the environment and associated social problems. Instead, people may also perform environmental actions for reasons more associated with economic, social or personal benefits than care for the environment in and of itself. The former refers to a biospheric-oriented value, whereas the latter is an anthropocentric-oriented value. Specifically, a biospheric value orientation is concerned with the perceived costs and benefits for the ecosystem, while anthropocentric value orientation is concerned with perceived costs and benefits for humanity with little regard to their ecological context (De Groot & Steg, 2008; Lee, 2011; Kopnina, 2011; Schultz, 2001; Stern, 2000).

Increasingly, authors are beginning to question whether biospheric and anthropocentric, values are polar opposites sitting at either end of a continuum, where one appears to be more or less ethical than the other, and to suggest that they might be better understood in relation to each other. Many of these take inspiration from the theory of 'deep ecology' which views humanity and the natural environment as essentially interdependent (Naess, 1973; 1986; 2015). This is especially evident in Naess's concepts 'biospherical egalitarianism' and 'symbiosis'. Central to both these concepts is the view that both human beings and other life forms have the right to survive (Devall & Sessions, 2010; Naess, 1973; 1986; 2015). The ontological assumption on which these premises are based is that nature is not something from which human beings can separate themselves (Huckle, 2014; Kober, 2013; Naess, 1973; 1986; 2015). Therefore, deep ecology can be seen as a call to protect and respect the environment for its intrinsic value, not simply, or solely, for its usefulness to the human species (Kober, 2013).

A key distinction within deep ecology is the difference between shallow and deep approaches. When the term was first introduced, the concept of shallow ecology was deemed to refer to 'narrow' environmental problems that focus on environmental pollution and resource depletion (Drengson, Devall & Schroll, 2011; Naess, 1973). It is, as Naess has pointed out, a system based on ecological principles with an emphasis on the benefit for human beings (Jacob, 1994; Naess, 1986). Devall and Sessions (2010) and Huckle (2014) argue that those living in technocratic-industrial societies are unavoidably anthropocentric

because of the way their lifestyles are fundamentally separated from the natural environment. These critiques show the limitations of shallow ecology principles because they do not require fundamental changes to the values and practices of individuals nor the transformation of society (Drengson et al., 2011; Jacob, 1994).

Deep ecology also involves deep questioning. It challenges narrow anthropocentric conceptions of personal and human values, beliefs and practice by considering the fundamental relationship between nature and humanity as an ethical position in which to consider what might be 'right' and what might be 'wrong' (Drengson, 2008; Drengson et al., 2011; Naess, 1986; 2015). It is a philosophical position that looks for long-term solutions for human-nature problems (Drengson, 2008; Naess, 2015). Shallow ecology in contrast, aims for short-term and quick technical solutions (Drengson, 2008; Naess, 2015). Naess (1986) provide an example to distinguish between the two. With regards to environmental pollution, Naess (1986) said that those who take a deep approach would seek to deal with the root causes of the problem although the process could be time consuming, while those who take a shallow approach may simply export polluting industries to other countries. Polluting industries usually are industries that produce exports by relocating pollution-intensive goods to countries with lower levels of environmental regulations (Christmann & Taylor, 2001).

Kopnina (2012b, p. 5) offers a statement that characterises the basis of deep ecology and biocentrism.

Environmental ethics literature poses the question as to the extent to which only loss in human life and welfare should be the basis of political action and moral concern, and whether human 'progress' should also take into account the consequences for non-human species.

According to Drengson et al. (2011, p. 102), "in our complex social systems it is basic values, choices, and priorities that determine how the whole system develops and what its effects are". Thus, it is important for people to consider their values, choices and priorities if they are to understand the meaning of deep ecology. This has important implications for my thesis because, as Gadotti (2010) points out, this means that there is a need for a complete reorientation of education in order to move away from current anthropocentric approaches.

However, for reasons pointed out just above, Naess (2015) claims that shallow ecology approaches are often the choice of policy makers, for example, through establishment of laws and policies that simply reinforce the status quo and consumptive patterns. Although some policies do acknowledge that there are problems in the balance between conservation and development, they tend to remain wedded to the belief that simply improving technology will reduce human impact on the planet (Drengson et al., 2011).

While deep ecology is comparable to biospheric orientation and vice versa, one question that remains unclear is about the durability of the two different approaches – i.e. whether biospheric-oriented educational activities that promote a connection with nature will have longer lasting effects (Schultz, Shriver, Tabanico & Khazian, 2004). From the literature it is clear that while deep biospheric approaches have relevance to my thesis, the distinction between deep and shallow approaches might not be as clear as was once thought, in short because pro-environmental behaviour can be influenced by either biospheric or anthropocentric approaches although the extent of their impact on individual actions and societal change may differ (De Groot & Steg, 2010; Steg & Vlek, 2009; Steg et al., 2014).

#### **2.4.2 Educational vision and reorientation**

Naess' (1973) theory of deep ecology, particularly its concern about the importance of deep questioning, coheres with the literature presented earlier which views transformative education as a means of promoting pro-environmental behaviour. The comparison between deep ecology and the international UN discourse indicates a crescendo of voices gathering momentum over the last few decades calling for the reorientation of education towards sustainable development (United Nations, 1992; Corcoran & Osano, 2009; Gadotti, 2010; Huckle, 2014; Sterling, 2001). Transformative education was the central emphasis in the Decade of Education for Sustainable Development (2005–2014) and, as I have pointed out above, a central part of the SDGs.

Malaysia also has embraced the UN sponsored agenda of ESD. The national concept of environmental education outlined by the Malaysian Department of Environment and the Centre for Environment and Development of the National University of Malaysia (2004) together with Yusoff (2003) in **Section 2.3** indicates that the content and the aims of

environmental education in the country are already in place to promote transformative ESD. The transformative approach of education is also apparent in the current general education system in Malaysia. In 2011, a new curriculum called the Standard Curriculum of Primary/Secondary School was introduced to emphasis higher order thinking skills to encourage students to develop reasoning skills to help make judgments in applying their knowledge (Ministry of Education, 2012). However, the practice of ROEE in Malaysia that I have presented in **Section 1.3** and **1.5** indicates that there remains a problem between policy aspirations and environmental education at the point of delivery. This raises questions around how the policy and practice of ESD influence each other.

According to Sterling (2001), any response to the call to reorient education towards transformative ESD may be easier to implement at the micro level, but is more difficult at a macro level. Based on his professional experience working with teachers and WWF-UK, Sterling (2001) said that teachers would usually give positive feedback when asked to adopt transformative approaches in their teaching. However, reorienting education at a macro level such as within an organisation or institution was reported to be more challenging because of the change resistant attitudes of governments and most policy makers (Sterling, 2001). Therefore, as Kopnina (2012b) suggests, the pursuit of reorienting education towards transformative ESD also includes the imperative to reflect on how the current content and aims of education are formulated at national level.

This section therefore suggests that my thesis should explore how ROEE in Malaysia may strive to provide transformative education to their participants in a way that the policy and practice are congruent.

## **2.5 Continuity of experience**

Dewey's concept of continuity of experience is a central philosophical pillar of this study because experiential learning is often associated with pedagogical opportunities found in residential outdoor education. This vast body of complex literature includes issues such as cognitive and affective engagement in relation to outdoor settings (e.g. Gurholt, 2008; Harrison, 2010; Knapp & Benton, 2006; Martin, 2003; Palmberg & Kuru, 2000; Smith-Sebasto & Obenchain, 2009; Stern, Powell & Ardoin, 2008). Other issues include learner

agency (e.g. Adkins & Simmons, 2002; Allison & Pomeroy, 2000; Andresen, Boud & Cohen, 2007; Estes, 2004; Eyster, 2009), the role of teachers, instructors or facilitators (e.g. Joplin, 1995; Estes, 2004), and significant life experience research (e.g. Ceaser, 2015; Chawla; 1998; Hsu, 2009; Li & Chen, 2015; Merriam & Clark, 1993; Tanner, 1980). The literature generally agrees with Nicol's (2001) conclusions that residential outdoor education tends to be associated with its potential for personal and social development and less so with environmental education outcomes (e.g. Amos & Reiss, 2012; Christie, Higgins & McLaughlin, 2014; Cooley, Burns & Cumming, 2016; Dillon et al., 2006; Ho, 2014; Kendall & Rodger, 2015; Scrutton, 2015).

A recent study by Scogin et al. (2017) provided evidence that experiential learning does not contribute to students' achievement in learning. In addition, negative outcomes are also possible for residential outdoor education. For example, outdoor experiential learning may distract students' attention when they are preparing for examinations (Christie et al., 2014). As we can see the literature does include some criticisms of residential outdoor education. However, it remains a popular medium for numerous training programmes and courses such as intercultural, professional, and interpersonal skills trainings (Blair, 2016; Brookes, 2002; Silberman, 2007; Burnard, 2013; Williams, Graham & Baker, 2003).

Whilst these research settings differ to my own it is important to note that what is characteristically absent from all is that they do not pay attention to learning that transcends those places. It is for these reasons that the concept of continuity of experience is so important to this thesis.

In his book *Experience and Education*, Dewey (1938, p. 35) explains that "the principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after". As such, learning should connect experiences in the past, present, and future. Ord (2009) argues that to further elucidate the concept of continuity of experience, it should be done separately from the concept of connection. Nevertheless, the two terms are closely interrelated and are therefore discussed together in this section.

Growth is the example Dewey provides to explain the principle of continuity of experience. According to Dewey (1938, p. 38), "every experience is a moving force. Its value can be

judged only on the ground of what it moves toward and into". As an experience grows, the direction it takes could either promote or impede further growth. Moreover, if it promotes growth, the experience could be educative. However, he also states that experiences can be miseducative where they lead to disconnected and dispersive outcomes (Dewey, 1938). In addition, the direction depends on the manner an experience "arouses curiosity, strengthens initiative, and sets up desires and purposes that are sufficiently intense" (Dewey, 1938, p. 38) to resonate and reveal the further direction of the experience's growth (Dewey, 1938). In other words, growth of an experience controls the connections between experiences. Thus, observing the growth of an experience and the connections it forms would provide indications which discriminate between experiences that are educationally worthwhile from those that are not.

A specific circumstance may be required to enable an experience to be educative. The ways people perceive the significance of an experience and process it have some bearing on whether the experience may be deemed as promoting or impeding growth and educative or miseducative. Dewey (1938) proposes that this requires attitudes that value the personal, emotional, and intellectual growth of oneself and others. As such, for this to happen, people are encouraged to see beyond taken-for-granted assumptions, to look for doubt amongst certainty, and develop critically-informed problem-solving modes of enquiry. He described a process by which this might come about (Dewey, 1938, p. 69):

- i. observation of surrounding conditions;
- ii. knowledge of what has happened in similar situations in the past, a knowledge obtained partly by recollection and partly from the information, advice, and warning of those who have had a wider experience; and,
- iii. judgment which puts together what is observed and what is recalled to see what they signify.

Perhaps because it requires judgement with a certain level of intellect and emotion, Dewey (1938) suggests that maturity is needed to enable a person to go through the process of forming a continuity of disintegrated experiences. For this reason, he recommends that adults assist younger people in reorganising connections between experiences in pursuing

growth of these experiences. Furthermore, according to Dewey (1938, p. 38), “the greater maturity of experience which should belong to the adult as educator puts him (sic) in a position to evaluate each experience of the young in a way in which the one having the less mature experience cannot do”.

Other authors have built on Deweyian thinking. According to Miettinen (2000), continuity of experience occurs in situations where uncertainty and indetermination emerge and the normal course of forming a connection between activities is disturbed, resulting in an impediment to the connection’s normal flow. This process requires observation of surrounding conditions. The observation would reveal if disturbance exists and whether efforts to solve the problem are required or not (Miettinen, 2000). If disturbance exists between an individual and surrounding conditions, Miettinen (2000) argues that intellectualisation and reasoning is required to study the conditions causing the problem before the working hypothesis to solve the problem is proposed and tested using overt action or imaginative action. When this happens, the intellectual outcomes of the process could be used as a resource for emergent problems and moreover, all these processes may reoccur and require constant attention and problem solving (Miettinen, 2000). While the latter part of Miettinen’s (2000) explanation reflects Dewey’s idea that connecting experiences requires some effort to make judgement, the earlier part on disturbance is rather different. Miettinen (2000) seems confident that connecting experiences that appear disintegrated will also lead to the sort of growth that Dewey is concerned with.

The idea of continuity of experience may also relate to the body of literature regarding the transfer of learning in outdoor education and most recently to “Brilliant Residentials”. This literature refers to situations in which people can transfer knowledge or a skill learnt in one place into a different context, or perhaps address a different problem. They are able to do this, the theory suggests, because they are able to perceive the connection between one and the other (Brown, 2010; Gass & Priest, 1993; Lobato, 2006; Priest & Gass, 2005). The difference between the contexts involved in the transfer could vary substantially. For Priest and Gass (2005), an unfamiliar environment may represent clear differences that learners need to comprehend if transfer is to be successful. However, Brown (2010) believes that transfer of learning could be very challenging to an extent that the idea of connecting experiences in the past, present, and future as suggested by Dewey (1938) could be problematical. Furthermore, according to Brown (2010, p. 17), “attempts to transfer

skills/knowledge from previous situations in fact hinders rather than aids performance". This critique is based on a particular standpoint which identifies psychology literature as too narrowly defined to embrace the complexity of all social systems that interact and combine to impact on learners' environments (Billett, 1996; Brown, 2010). The danger of this position is that educators end up adopting an uncritical stance including taken-for-granted assumptions that knowledge and skills can be isolated and removed from their original context and then applied as general or abstract principles in other situations (Brown, 2010; Lobato, 2006).

Whilst the process of generalisation and abstraction could make the transfer of learning possible, Billett (1996) points out that the less relevance there is between the original context and that of its application, the more difficult the transfer is likely to be. For Brown (2010) transfer is mostly likely to happen if situations involved in it are very familiar. Furthermore, Beames and Brown (2016, p. 51) argue that learning something with a higher degree of relatedness to "settings, contents, methods and learning outcomes" in everyday settings is important in helping students to engage with real-world issues.

In line with this idea, Billett (1996) and Brown (2010) accentuate the importance and appropriacy of experiencing and understanding the diverse interactions that exists within social environments. This is because the transfer of learning requires individuals to reconstruct the knowledge and skills learned by considering diverse interactions in social environments and to appropriately apply these in different conditions (Billett, 1996; Brown, 2010). Eyler (2009) is in agreement and adds that when people are specifically taken into a community, their learning can more easily bridge "inert knowledge" or factual knowledge into knowledge-in-use.

The lack of understanding about diverse interactions in social environments is likely to cause limitations regarding the long-term benefits of outdoor education (Brown, 2010). Telford's (2010) study showed that it is common for people to perceive influences from other events as they move on and experience other stages of their lives. For Telford, stages of life were identified as influential due to changes in an individual's social status. Like Dewey (1938), Brown (2010) and Telford (2010) suggest that, although outdoor experiences may be a springboard to other events, changes in social status may be more powerful than previous outdoor experience.

The concepts associated with “Brilliant Residentials”, as explained by Kendall and Roger (2015), work in tandem with prior explanations on continuity of experience. As I have mentioned in **Chapter 1**, Kendall and Roger (2015) state there are five key criteria that would make a residential outdoor education brilliant. They are referring to residential experiences being the setting in which pupils can achieve significant advances in engagement with their learning, resilience, attainment and progress, teacher-student relationships, and wider school cohesion (Kendall & Roger, 2015). The five criteria are (Kendall & Roger, 2015, p. ix–x):

- i. providing progressive residentials;
- ii. providing residentials that are embedded within existing programmes of delivery;
- iii. providing residentials that are designed and led by school staff;
- iv. providing residentials that are designed and led by students; and
- v. providing new and memorable experiences.

Based on these criteria, all five can be related to the idea of continuity of experience. The first criterion, relates to my own research into ROEE courses. According to past studies (e.g. Bogner, 1999; Chawla & Cushing, 2007; Ernst & Theimer, 2011; Liefländer et al., 2013; Stern, Powell & Ardoin, 2008), the duration of the residential period matters in order that participants are given sufficient time to develop a connection with nature that will promote environmental awareness. As I will show, this is an important criterion for my own research where ROEE courses are limited to a few days.

The second point, suggests that residentials should be integrated and closely linked to curricular classroom activities (Kendall & Roger, 2015). Again, this provides a useful prompt to consider my own research setting because, if continuity is to take place, then integration of residential experience with formal education needs to happen before students can view knowledge more comprehensively and triangulate it within different settings and contexts. (Colardyn & Bjornavold, 2004).

For the purpose of my own research I have merged the third and fourth criteria and summarised these as ‘providing residentials that are co-designed and co-led by school staff and students’. I have used the prefix ‘co’ to suggest that students have some power and

agency over their own learning. This relates to my own empirical enquiry where the residential experience should be conducted so that learning from these experiences can be extended back in school and other social situations (Kendall & Roger, 2015).

The fifth criterion, “providing new and memorable experiences” is relevant to continuity of experience, especially due to the concept of memorability. According to Kendall and Roger (2015), memorability of residential experiences helped retention of what was learned at the residential back in school. This is important due to the possibility that learning fades when experience is not reinforced (Knapp & Benton, 2006; Smith-Sebasto & Obenchain, 2009; Stern et al., 2008). Knapp and Benton (2006), Nadelson and Jordan (2012), and Smith-Sebasto and Obenchain (2009), have shown how memorable experiences could be strengthened through active engagement in learning activities, repetition or reinforcement, and making the information relevant to participants. These authors believe that these preconditions are necessary for transfer to occur.

Taken together, Dewey’s (1938) continuity of experience including connection, direction, and capacities for growth, Billett’s (1996), Brown’s (2010), Gass and Priest’s (1993), Lobato’s (2006), and Priest and Gass’ (2005) ideas of transfer, and Kendall and Roger’s (2015) proposed criteria for “Brilliant Residential” have direct relevance to my own investigation. Together, this literature is extremely useful because it provide important background material to help me focus on my own research regarding unfamiliarity, contrast, and spatial movement, in relation to ROEEs in Malaysia, which are typically standalone experiences that are dislocated from participants’ social and physical environmental routines and from learning in school. What these sources help to show is that, in residential education settings, more attention should be given by programme designers, facilitators, teachers, and other social communities’ members to helping students make links between educational experience and their social world.

## **2.6 Factors influencing environmental behaviour change**

Many models and theories have been produced to explain how certain factors interact with each other in the process of environmental behaviour change. Amongst these are the Norm Activation Model (Schwartz, 1977), the Theory of Planned Behaviour (Ajzen, 1991), the

Theory of Responsible Environmental Behaviour (Hines, Hungerford & Tomera, 1987), the Comprehensive Action Determination Model (Klößner & Blöbaum, 2010) and many more. It is notable that in some models they use the term 'behaviour' while others use the term 'action'. It is even more notable that most do not clearly distinguish between the similarities or differences between the two (Kim, 2012). However, Jensen and Schnack (2006) have sought to address this omission and assert that behaviour modification and action competence are two fundamentally different goals for environmental education:

Related to an action, there will always be a conscious making up of one's mind, while this is not necessarily the case with a behavioural change which could be caused by pressure from other people (e.g. a teacher or peers) or by other influence such as advertisements. (Jensen & Schnack, 2006, p. 476)

The difference between action and behaviour described above is comparable to Kinsella and Tinsley's (2004) description. For Kinsella and Tinsley (2004), the key determinant is the motivation that inspires an action and, crucially, whether that action is internally or externally driven, or whether it occurs through psychological or social processes.

Through a critical review of literature, the factors most commonly discussed in the models can be categorised into two, namely psychological and situational factors. Situational factors are the category in which social aspects belong (mentioned in an earlier section as important to ESD). However, a comparison that I have made between the two categories indicates that these models mostly focus on psychological factors. In other words, the literature has focussed less on how situational factors might provide motivation to inspire behaviour and action.

In the following paragraphs I will investigate this more fully. It is important to note that there are a variety of studies that have looked at this area and I will report on those that have direct relevance to my own study and have narrowed the parameters by referring only to the studies most cited.

### **2.6.1 Psychological factors**

Psychological factors are comprised of different components related to something internal that results in environmental behaviour change (where internal is considered to be the human organism). This section looks at the most regularly reported factors that appeared in

the literature which were: environmental knowledge, environmental attitudes and perceived action control. Ajzen (1985) and Klöckner and Blöbaum (2010) have also pointed to the importance of personal norms and self-efficacy but noted that they are hardly ever discussed. The relative importance of these terms is the focus of this section.

#### **2.6.1.1 Environmental knowledge**

Environmental knowledge is said to be the foundation that helps to develop the sort of conceptual cognition that can influence environmental behaviour change (Bögeholz, 2006; Hines et al., 1987; Bamberg & Möser, 2007). Its interplay with other variables such as awareness, attitudes, locus of control and personal responsibility was often assumed to be part of what forms an intention to act, which these authors suggested would lead to behavioural change (Hines et al., 1987; Bamberg & Möser, 2007; Kaiser, Roczen & Bogner, 2008; Kollmuss & Agyeman, 2002; Meinhold & Malkus, 2005; Steg & Vlek, 2009).

There are three research-informed models in the literature that were developed to show how knowledge acts as an antecedent and pathway towards environmental actions. The models are the norm activation model (Schwartz, 1977), the theory of responsible environmental actions (Hines et al., 1987) and the gap model (Kollmuss & Agyeman, 2002). Based on the outcome of a meta-analysis, Hines et al., (1987) revealed that knowledge, comprising knowledge of action strategies and knowledge of issues and action skills, would promote engagement in responsible environmental behaviours through its direct effect on the intention to act. It is unlike the norm activation model (Schwartz, 1977; De Groot & Steg, 2009) and the gap model (Kollmuss & Agyeman, 2002) as it suggests knowledge has indirect effects on intentions and environmental action. According to the norm activation model, knowledge, particularly knowledge of consequences, affects environmental behaviour change by affecting ascription of responsibility (De Groot & Steg, 2009). The gap model was developed as a result of combining ideas from other models (Ajzen, 1991; Fietkau & Kessel, 1981; Hines et al., 1987; Blake, 1999; Burgess, Harrison & Filius, 1998; Fliegenschnee & Schelakovsky, 1998). Through identification of the commonalties and contradictions of these models, Kollmus and Agyeman (2002) suggest that there is a relationship between knowledge, values and attitudes in the way that they mutually influence each other.

Additionally, the model also suggests that lack of knowledge would affect one's emotions such as feelings of fear that would hinder the effectiveness of environmental behaviour change (Kollmuss & Agyeman, 2002).

Findings from other empirical studies have challenged the causal link between the acquisition of environmental knowledge and the assumption that this necessarily leads to developing pro-environmental actions. Whilst there are studies that indicate environmental knowledge as a significant predictor of pro-environmental action (Meinhold & Malkus, 2005), there are increasingly more studies which warn against the linearity of this conclusion (Bamberg & Moser, 2007; Fielding & Head, 2012; Hwang, Kim & Jeng, 2000; Steg & Vlek, 2009). For example, Bamberg and Möser (2007) conducted research that replicated and then extended the theory of responsible environmental behaviour based on the theoretical and methodological idea from the original theory by Hines et al. (1987). This modification was made by integrating the concept of environmental behaviour in the norm-activation model (Schwartz, 1977) that emphasises the pro-social dimension, and the environmental behaviour concept in the theory of planned behaviour (Ajzen, 1991) that emphasises self-interest.

Whilst knowledge is a significant factor in the development of pro-environmental behaviour, other research began to show that it was not the primary factor. At this point a new body of literature began to emerge that understood knowledge to be much more nuanced and diverse. For example, Jensen (2002; 2004) and Frick, Kaiser and Wilson (2004) discussed the importance of diversity of knowledge but remained sceptical that acquiring knowledge *per se* is in itself an assurance that pro-environmental actions will follow. These findings paved the way to the view that knowledge that is particularly action-oriented is more likely to lead to environmental actions (Jensen, 2002; Frick, et al., 2004).

Jensen (2002; 2004) suggested that environmental knowledge has four dimensions comprising: knowledge about effects, knowledge about their root causes, knowledge about strategies for change, and knowledge about alternatives and visions. Knowledge about effects addresses the existence, scope and spread of environmental problems; knowledge about root causes addresses the reason why the environmental problems occur; knowledge about strategies for change is about how the problems can be solved; and knowledge about alternatives and visions gives an idea of other possibilities as a source of inspiration for

personal motivation (Jensen, 2002; 2004). The first three dimensions of knowledge seem comparable to the knowledge mentioned above – for example Hines et al. (1987) focus on knowledge of issues, knowledge of action strategies, and action skills in the theory of responsible environmental action. Knowledge about alternatives and visions determines the motivation and ability to act and change such as in relation to one's own life or others' (Jensen, 2002).

Frick et al. (2004) categorise environmental knowledge into three categories, namely system knowledge that concerns the natural states of ecosystems and the processes within them, action knowledge and effectiveness knowledge. Note that knowledge about effects and their root causes that are proposed by Jensen (2002; 2004) lie in the category of system knowledge. Interestingly, Frick et al. (2004) distinguished knowledge of effectiveness from action knowledge. The difference is that action knowledge is about 'knowing how', while knowledge of effectiveness should enable one to identify the most effective technique among the available strategies (Frick et al., 2004; Liefländer et al., 2015). Knowledge of effectiveness was deemed important in order to understand the significant impacts of the actions in terms of their pro-environmental effects (Frick et al., 2004). However, I need to reemphasise that, based on my analysis of the literature, knowledge, in all the ways it has been defined, should not be overemphasized or considered as a precondition to changing environmental behaviour.

In general, each of the categories of knowledge proposed is believed by these authors to have the potential to promote environmental actions in the sense that information and facts help us to understand what the problem is (Hwang et al., 2000) but the relationship between knowledge and action is not very significant (Bamberg & Möser, 2007; Fielding & Head, 2012; Hwang, et al., 2000; Steg & Vlek, 2009). However, where this literature is useful is in problematising notions of cause and effect and encouraging researchers and educators to look more carefully at motivating factors. As Steg and Vlek (2009) and Stern (2000) suggest, the focus of pro-environmental actions should not simply be based on the assumption that there is a knowledge deficit, but that individual circumstances need to be taken account of. Research from Fielding and Head (2012) shows that individuals feel trapped when there are few options (and alternative actions) and worse, this malaise can lead to environmentally harmful behaviour.

Considering the importance of the various strands of environmental knowledge above, it is clear from the literature that none of them on their own are likely to prepare people for changing their environmental behaviour. Instead, the knowledge should be amendable (Stevenson, 2007), and justifiable according to its connection with a particular physical and social context (Van Kerkhoff & Lebel, 2006). By amendable Liefländer et al. (2015), Kaiser and Fuhrer (2003) and Kaiser et al. (2008) suggest that, whilst possession of high level environmental knowledge is required, it is also important to merge the various dimensions of environmental knowledge. For example, Liefländer et al. (2015) and Kaiser et al., (2008) suggest that the effectiveness of action-related knowledge is dependent on system knowledge. System knowledge will promote conservation behaviour indirectly instead of directly by providing a reason why one needs to acquire knowledge about strategies and effectiveness, which are more powerful in directly producing environmental behaviour (Kaiser, et al. 2008).

#### **2.6.1.2 Environmental attitudes**

In addition to knowledge, attitudes are also considered to be a significant predictor of pro-environmental action (Arbuthnott, 2009; Carmi, 2013). They have been described as the psychological tendency to justify one's favourable or unfavourable feelings towards the environment (e.g. Ajzen, 1991; 2002; Hines et al., 1987; Hwang et al., 2000; Kolmuss & Agyeman, 2002; Milfont & Duckitt, 2010). Within the theory of responsible environmental action, Hines et al., (1987) suggest that environmental attitudes are key personality factors that will determine the intention to act. Other personality factors include locus of control and personal responsibility (Hines et al, 1987). The theory of planned environmental action (Ajzen, 1991) suggests that attitudes need to combine with other factors in order to change people's environmental behaviour. The attitude-behavioural-context model (Guagnano, Stern & Dietz, 1995) illustrates the relationship between attitude and situational factors.

In the theory of responsible environmental action by Hines et al. (1987), attitudinal factors are useful in developing particular perspectives that recognise the diversity of ecology as a concept and the complicated human/nature relationship and how this might lead to action (Hines, et al., 1987). As Bamberg and Möser (2007) redeveloped this model, they found that

*moral emotion* had an effect on developing responsible environmental behaviour. This was due to their findings that people showed feelings of guilt when not behaving in ways that might be considered pro-environmental. This was particularly the case where participants found such behaviours easy and opted to perform them, as opposed to experiencing difficulties that prevented them from performance. Kolmuss and Agyeman (2002) developed the 'gap model' to show how such feelings of guilt were a barrier to developing positive environmental attitudes and acquiring environmental knowledge.

There are many factors that determine the orientation of attitudes towards the environment. Milfont and Duckitt (2010) refer to two higher order factors, namely preservation and utilization. Preservation, according to them, is about ensuring that nature and its diversity of species should be prioritised, while utilisation on the other hand focuses on the right of humans to use and alter nature and all natural phenomena for the purpose of their own well-being (Milfont & Duckitt, 2010).

The definition of preservation and utilisation by Milfont and Duckitt (2010) is comparable to the concept of biospheric and anthropocentric value orientations that are used in the studies by Amérgo, et al. (2007), De Groot and Steg (2008), Kopnina (2014) and Ojea and Loureiro (2007). As I have presented in an earlier section, biospheric value orientation is concerned with the perceived costs and benefits for the ecosystem, while anthropocentric value orientation is concerned with perceived costs and benefits for humanity with little regard to their ecological context (De Groot & Steg, 2008; Lee, 2011; Schultz, 2001; Stern, 2000). Schultz (2001) and Stern (2000) expand these types of attitude based on a tripartite classification, which includes the biosphere (e.g. respecting nature and unity within it), self (e.g. my health, my future), and other people (e.g. people in my community and social justice). The first category is referring to the concept of biospheric value orientation; the two latter categories might be described as fractions within anthropocentric value orientation, whereby concern for self is also called egoistic value orientation, while concern for other people refers to an altruistic value orientation (De Groot & Steg, 2008; Lee, 2011; Schultz, 2001; Stern, 2000).

### 2.6.1.3 Locus of control

For Bradley and Sparks (2002) and Cleveland, Kalamas and Laroche (2012) locus of control is about an individual's beliefs and ability to control outcomes. More precisely, in the context of this thesis, it reflects the individual's ability to become active in developing pro-environmental behaviour (Hines, et al., 1987; Hungerford & Volk, 1990; Hwang et al, 2000, Mittendorff et. al., 2012). It is important to note that actions are conducted based on the belief that they are the right thing to do regardless of whether they bring about changes that will make a lasting difference. This distinction is important and one to which I will return (Liarakou, Kostelou & Gavrilakis, 2011).

Based on the literature reviewed, two dimensions of locus of control have been identified. The first is the comparison between internal and external loci, while the second is the comparison between individual and group loci. As noted above, internal locus of control is referring to one's belief that their individual actions can bring about an outcome (Fielding & Head, 2012; Hsu, 2004; Rotter, 1966). This can be further divided into individual locus of control and group locus of control. *Individual* locus of control refers to an individual's perception of their own ability to perform a particular action, which will result in an anticipated reinforcement for action, while *group* locus of control is the belief that one's actions can bring about an outcome when the actions are performed in a group (Hwang et al., 2000; Ramsey, 1993). External locus of control is a sense of powerlessness and lack of control over situations. Those who experience this believe that changes happen due to the control of others (Fielding & Head, 2012; Hwang et al., 2000; Rotter, 1966).

According to Cleveland et al., (2005); Kalamas et al., (2014) and Mittendorff et al., (2012), on the one hand a person who possesses a strong *internal* locus of control believes that they can govern the occurrence of situations in their life. On the other hand, a person who possesses a strong *external* locus of control is more likely to fail in changing their environmental behaviour. The reason put forward to explain this is that individuals are free to act themselves but when the locus lies with a group and, importantly, when that group is dependent on each other, there can be a tendency for such groups to think that they can only take action as a result of being together (Hwang et al., 2000). It is important to note that most of the studies that have investigated the influence of locus of control on environmental change have looked at the practice of individuals (and not groups) in terms

of recycling and environmental consumerism where it was understood that successful outcomes would be identified because of the low cost and effort, with minimum time constraints and inconvenience factors (Cleveland et al., 2012).

The relationship between locus of control and environmental actions varies. Hwang's (2000) study concluded that locus of control has a strong effect on people's intention to act; stronger even than other antecedents such as knowledge, attitude and personal responsibility. Locus of control did not simply affect the intention to act but also nurtured the development of environmental attitudes (Hwang et al., 2000). This finding corroborates the ideas that inform the theory of planned behaviour which similarly suggest that locus of control can make a direct impact on the intention to act whilst affecting attitude development (Ajzen, 1991). However, there are also studies that show locus of control is not the antecedent factor of environmental actions (Cleveland et al., 2012; Cullen & Volk, 2000). Therefore, Cullen and Volk (2000) conclude that this relationship between locus of control and environmental behaviour change is somewhat inconclusive and enigmatic.

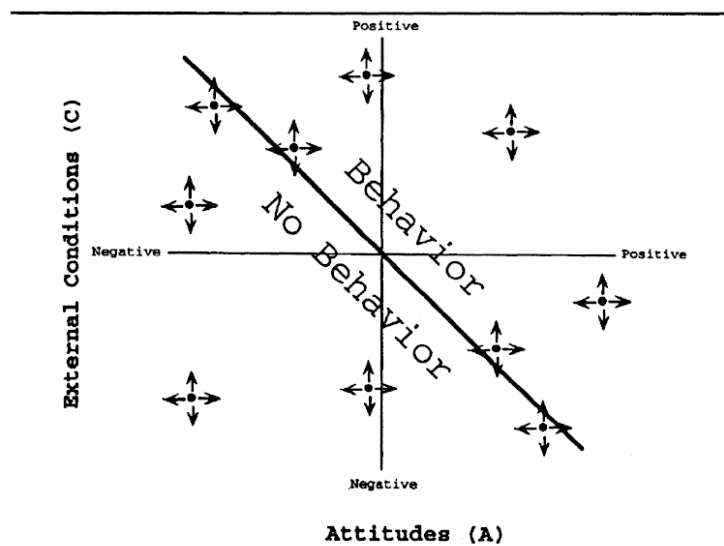
### **2.6.2 Situational factors**

In the above discussions, Guagnano et al.'s (1995) model described the role of situational conditions in determining the potential for changing environmental behaviour. Situational conditions also appear as a determining factor in the theory of planned environmental behaviour (Ajzen, 1991), the theory of responsible behavioural model (Hines et al., 1987), the gap model (Kollmuss & Agyeman, 2002) and the comprehensive action determination model (Klöckner & Blöbaum, 2010). According to Kollmuss and Agyeman (2002), 'situational factors' is an umbrella term that includes several underlying factors that are more specific including, most notably, social factors. However, seldom are these fragments of factors discussed in detail. Although there are an abundance of studies that investigate situational factors, this section primarily presents these with reference to how they are discussed in the models by Ajzen, (1991), Hines et al. (1987), Klöckner and Blöbaum (2010), and Kollmuss and Agyeman (2002).

The primary implication that arises from the understanding that situational factors influence environmental behaviour is that, although people may have similar sets of

psychological competencies, their ability to act will differ from one set of social conditions to another (Corraliza & Berenguer, 2000). Whether the situational factors are negative (e.g. unpleasant or unsupportive) or positive (e.g. pleasant or supportive), has an effect on whether the incidence of environmental behaviour change decreases or increases (Guagnano et al., 1995; Hines et al., 1987).

The difference between situational factors and psychological factors seems to be that the impact of situational factors on environmental behaviour change is indirect. For example, according to the attitude-behavioural-context model, situational factors coexist with people's attitudes; different conditions of external conditions and attitudes, whether they are positive (encouraging) or negative (constraining), it is said, will give different results on environmental behaviour change (see **Figure 2.1**) (Guagnano et al., 1995).



**Figure 2.1** The A-B-C model by Guagnano, Stern and Dietz (1995)

As shown in **Figure 2.1**, the ideal condition to change environmental behaviour is when attitudes and situational conditions are positive. However, it would appear that a negative attitude or situation does not necessarily mean that people will not act, although there would appear to be an element of coercion in these circumstances (Guagnano et al., 1995). This idea corroborates Corraliza and Berenguer's (2000) idea regarding the relationship

between situational factors and where success in changing environmental behaviour is determined by the conflict or consistency that is created between the two factors.

Conflict will be high when personal and situational variables are of different signs, that is, when there is high (positive) personal disposition to action but the situation makes it difficult, or when personal disposition to act is low (negative) and the situation facilitates it. Consistency occurs when personal disposition and the situational variables are of the same sign; that is, when the personal disposition to the behaviour is low and the situation makes it difficult, or when the personal disposition to the action is high and the situation facilitates it. (Corraliza & Berenguer, 2000, p. 837)

Based on the review so far, situational factors are commonly discussed in relation to social norms and institutional factors. Hines et al. (1987) and Kollmuss and Agyeman (2002) argue that situational factors can also include economic factors. Considering that the current study is framed by the literature on sustainable development, the influence of all of these situational factors immediately became one of the concerns of this study. As explained in **Section 2.2**, the concept of sustainable development rests on three central pillars: economic, social and environment (McKeown & Hopkins, 2003). The following paragraphs therefore focus on social norms, institutional factors and economic factors.

#### **2.6.2.1 Social norms**

'Social norms' is the situational factor that is most often and in most detail discussed regarding models of environmental behaviour change. Social norms explain the extent to which individuals or groups approve or disapprove of performing a given behaviour (Ajzen, 1991). According to the comprehensive model of ecological behaviour (Klöckner & Blöbaum, 2010), there are at least two ways in which social norms may be influential.

Firstly, social norms may be influential by impacting one's personal norms. According to Klöckner and Blöbaum (2010), social norms will turn into personal norms when people internalise certain social norms into their personal value system. Cialdini, Kallgren and Reno (1991) add to this 'descriptive norms' and 'injunctive norms', where the former is what most people do, while the latter is what most people approve or disapprove of. These norms appear similar to the internalisation of social norms as noted by Bamberg and Möser

(2007), namely fear of social exclusion or feelings of guilt. The assumption was that people's environmental behaviour may be influenced by descriptive norms when they want to be considered as part of a community. On the other hand, injunctive norms may be influential when people feel guilty if they have not been acting in accordance with the standards of behaviour expected of a social reference group (Bamberg & Möser, 2007).

Secondly, Klöckner and Blöbaum (2010) suggest that social norms may be influential in environmental behaviour change through the formation of habit. According to them, habit can be the result of strong influences formed by situational conditions. In other words, intentional processes on the part of the individual may not always be the mechanism for environmental behaviour change (Klöckner & Blöbaum, 2010).

Kollmus and Agyeman (2002) state that cultures in small, highly populated countries tend to be more resource conscientious than larger countries. They refer to Switzerland and the Netherlands as examples of the former and the USA as an example of the latter. This suggests that social norms are determined by social institutions as large as a country. In contrast, Ajzen and Driver (1991) suggest that much smaller groupings such as friends or family members may be influential, which suggest that social norms can be determined by a range of micro and macro settings.

#### **2.6.2.2 Institutional factors**

According to Kollmuss and Agyeman (2002), institutional factors refer to the availability of infrastructures and services that would promote or hinder environmental behaviour change. In order to change a particular environmental behaviour, there might be several institutional factors that may promote or inhibit the change. For example, in the case of choosing a mode of transportation there are road conditions, availability of parking space at the destination and traffic congestion to think about (Klöckner & Blöbaum, 2010).

Klöckner and Blöbaum (2010) suggest that, in some cases, institutional factors may influence environmental behaviour change by putting people in a situation in which they are coerced into changing their environmental behaviour. Following the transportation example, Klöckner and Blöbaum (2010) explain how people are more or less forced to use

certain transportation options when access to a car is limited. In contrast, Guagnano et al. (1995) deem that institutional factors are influential in environmental behaviour change because they can remove major barriers, which is the case when bins are provided for recycling which reduces inconvenience and encourages certain actions (Guagnano et al., 1995).

### **2.6.2.3 Economic factors**

Hines et al. (1987) and Kollmus and Agyeman (2002) include economic factors amongst the situational factors that have a strong influence on one's environmental behaviour. For example, people may change their behaviour through either financial benefit or financial loss (Kollmuss & Agyeman, 2002).

In the description of their model, Kollmus and Agyeman (2002) did provide some statistical examples to indicate the relationship between economic factors and environmental behaviour change. For example, the study by Dobson (2007), presented earlier in this chapter (in **Section 2.4**) provides an example of where, in Durham and the Republic of Ireland, people changed their behaviour by reducing their use of private vehicles and plastic shopping bags as a result of fiscal incentives offered by the government.

In addition, Stern (2000) provides insights regarding the influence of economic factors. He states (2000, p.417) that "the higher price of 'organic' produce may be an economic barrier to purchase for some people, whereas for others it is a marker of a superior product". This example suggests that attitudes and beliefs are dependent on how people interpret the meaning of a particular situation.

This section presented literature that identified some of the factors that could influence individual's behavioural change. This body of literature provided me with an overview of how I might understand the values and attitudes of the ROEE participants in Malaysia. Divided into two categories, psychological and situational, which commonly interact with each other, this classification of factors and their interaction is a clear indication that the process of change in environmental behaviour is subjective and complex.

## 2.7 The Transtheoretical model

As discussed in **Section 2.4**, the literature regarding environmental education, ESD and environmental behaviour collectively charts the early emphasis on explanatory models that were psychological and how research pointed to the importance of social processes in bringing about behaviour change. I have also shown how models have been used as mechanisms to explain behaviour and also as predictors of how to bring about change. Whilst I have attempted to show how various models are linked or perhaps differ theoretically, it is fair to say that the literature is fairly fragmented. This section presents the Transtheoretical model (TTM), which brings together psychological and sociological factors. According to Prochaska, Redding and Evers (2008, p. 97), “the Transtheoretical Model (TTM) uses stages of change to integrate processes and principles of change across major theories of intervention, hence the name Transtheoretical”.

### 2.7.1 Stages of change

According to Spencer et al., (2007), ‘stages of change’ refers to the degree of readiness an individual exhibits toward adopting a particular behaviour, while Marcus and Simkin (1994) suggest it is a construct that encompasses behaviour and behaviour intention.

DiClemente and Prochaska suggest there are five stages of change. These are pre-contemplation, contemplation, preparation, action and maintenance (DiClemente & Prochaska, 1982; Prochaska & DiClemente, 1982). However, research began to suggest that some explanatory mechanism was required following the maintenance phase and a sixth stage, termination, was added (Prochaska & Velicer, 1997). **Table 2.2** provides a description of each of these stages which I have adapted from the work of Prochaska et al. (1992), Prochaska et al. (2008), Prochaska and Velicer (1997) and Xiao et al., (2004b).

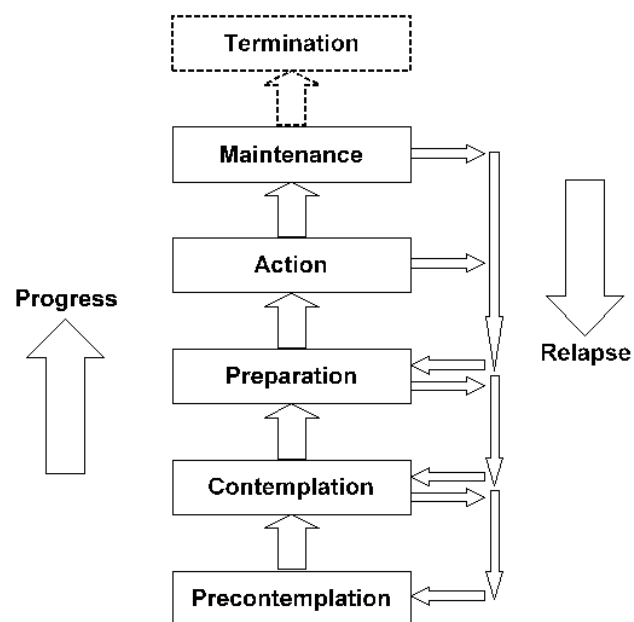
**Table 2.2** Descriptions of the Transtheoretical Model's stages of change

Stage	Description
Pre-contemplation	This is the stage in which people feel unmotivated, not ready or with no intention to take action in the foreseeable future, usually within the next six months. Reasons for this can be lack of awareness and knowledge about the consequences of current behaviour, or perhaps a number of failed attempts at change which have been demoralising, discouraging and disincentivising.
Contemplation	It is this stage in which people intend to take action within the next six months. In other words, they are deliberating about taking action. Unlike the previous stage, people in this stage are more aware of the pros of changing but are also acutely aware of the cons. Due to this reason, it is said to be the most critical stage, where the potential for relapse is the highest.
Preparation	This is the stage in which people have become more equipped to take action, usually measured within 30 days. They may have experienced unsuccessful attempts already, but yet are still ready to lead themselves towards behavioural change. Therefore, people in this stage are more likely to have a plan of action to eliminate obstructions that could prevent their intention to take action. The plan is likely to include considerations about themselves and also their social world.
Action	In this stage people have already made efforts to make changes in their life-styles within the past six months. A significant commitment is required to ensure the actions are overt. There should also be criteria that distinguish between the outcomes that might be achieved as a result of taking actions and the consequences if the actions are not taken.
Maintenance	In this stage people make efforts to stabilise their actions. Action changes will have been overt for more than six months and up to five years. People in this stage are less tempted to relapse. Instead, they become more confident to continue with the changes they have made.
Termination	This is the stage in which the behaviour change has become very stable. There is 100% confidence, zero temptation, thus perhaps zero percent of possibility to relapse.

With regard to the six stages of change, the underlying idea is that intervention for a successful behaviour change should be tailored to a person's specific current stage for change (Adams & White, 2003; Xiao et al., 2004a, Xiao et al. 2004b). Although an intervention is designed for participants in a specific stage of change, the results of intervention can be individually different (Prochaska & DiClemente, 1982). For example, Prochaska et al. (2008) and Velicer et al. (1998) deem that, to ensure the effectiveness of an action-oriented intervention, it is best to involve people who are in the stage of

preparation. But, when they are effective, the time required for the change may also be different for everyone, and there is also a possibility that people may get stuck at a particular stage for long periods (Mair & Laing, 2013; Xiao et al., 2004b).

The worst scenario is when one's position in the stages of change relapses. They may move through the stages several times before reaching an overt and stable position with regard to successful long-term behaviour change (Nordqvist et al., 2006; Sutton, 2001). The TTM was first conceptualised as a linear progression, but subsequent research has shown that changes could occur in a spiral pattern (Xiao et al., 2004b) (see **Figure 2.2**).



**Figure 2.2** The Transtheoretical Model (source: Howell, 2012)

Based on the descriptions of stages of change in **Table 2.2**, the probability of relapse should decrease as one moves to a more robust stage of change which I will now look at in more detail.

### 2.7.2 Processes of change

The concept of stages of change suggests that one can improve to a higher level over time. However, the model also suggests that time is not the sole factor, but requires interaction with processes of change. Processes of change can be defined as “covert and overt activities and experiences that individuals engage in when they attempt to modify problem behaviours” (Prochaska et al., 1992, p. 1109). This is an important construct in the TTM as its integration of ideas with the construct of stages of change is the key to guiding the design of educational interventions for behaviour change more prudently. Before I proceed with the explanation of how this might occur, I will present the processes that are proposed in this model.

There are 10 processes of change outlined in the TTM that cover various approaches of intervention. According to Marcus and Simkin (1994), in the field of health psychology, the 10 processes include behavioural, cognitive, existential, experiential, gestalt, humanistic, interpersonal, psychodynamic, and radical therapy intervention. In a study of consumerism, Xiao et al. (2004b) amended and reduced these categories into cognitive, affective, evaluative and behavioural.

The literature shows that the TTM has been adopted mostly within the field of health therapy. Therefore, their explanation, particularly about the process of stages, are much related to that area. In **Table 2.3**, I have adapted the formulations of Howell (2012), Prochaska et al. (1992), Prochaska and Velicer (1997) and Xiao et al., (2004b) to provide explanations about every process of change more generally, so that they are suitable for being applied to this study, and not limited to health. To assist with this I have drawn heavily on the work of Howell (2012) who was also looking at environmental behaviour change.

**Table 2.3** Descriptions of the Transtheoretical Model's processes of change

<b>Change process</b>	<b>Definition of change process</b>	<b>Examples of interventions/technique</b>
Consciousness raising	It is a process that emphasises the importance of increasing people's awareness about the causes and consequences of taking and not taking a particular action. This awareness can be increased by learning new facts, ideas, and tips that support the positive behaviours and reject the negative behaviours.	Feedback, confrontations, interpretations, experience sharing, and media campaigns.
Dramatic relief	This process suggests that people can improve their stage of change by experiencing negative emotions that go along with their awareness about the risk of their current behaviour. This process can encourage behaviour change when an individual is motivated to reduce or anticipate relief from negative emotions.	Media campaigns, role play, feedback about negative consequences of current behaviour, and stimulating sense of regret.
Self-re-evaluation	This process refers to the combination of cognitive and affective assessments that individuals conduct to see their self-image with or without their current behaviour, regardless of whether the behaviour is a positive or negative behaviour. It is to make them aware of their guilt towards the behaviour.	Value clarification, role model and imagination.
Environmental re-evaluation	This is a process that takes cognisance of the negative impact of negative behaviours or the positive impact of positive behaviours on one's proximal social and/or physical environment through cognitive and affective assessment.	Empathy training, testimonials, and family interventions.
Self-liberation	A process for making a firm commitment to change. It depends on the individual's belief that they can change, and requires commitment and re-commitment to act on that belief.	New Year's resolution, public testimonials, public pledges.
Social liberation	This is the process of seeking opportunities for social support to motivate behaviour change.	Policies intervention and enforcement, advocacy and public promotion.
Counter-conditioning	This process requires learning and acknowledging that positive behaviours are a better alternative to negative behaviours.	Assertion, desensitization, and positive self-statement.
Stimulus control	A process that requires individuals to remove any stimuli associated with negative behaviour and	Avoidance, restructuring environment.

	replace them with prompts to get engaged in positive behaviours. Controlling the amount of rewards can motivate behaviour change, on the other hand rewards are reduced or withdrawn for negative behaviour.	
Contingency management	Contingency management attempts to show to the individual the consequences for taking steps in a particular direction, whether participating in, following through or avoiding negative behaviours. This can be done by increasing reinforcements. Through reinforcement, positive behaviours will be repeated. Reinforcement is compatible with one of the key ideas of the model that proposes behaviour change should occur naturally, but with intention.	Self-rewards, contingency contracts, punishments and group recognition.
Helping relationships	This process combines caring, trust, openness, acceptance and support for positive behaviour with those who are actively involved in helping them change their behaviour.	Rapport building, therapeutic alliances, counsellor calls, and buddy system.

Based on findings from a number of cross-sectional, longitudinal and intervention studies, different processes of change were found to be emphasised at a different stage of change (Marcus & Simkin, 1994). To foster effective behaviour change, understanding which stage a person's current behaviour is at is the key (Xiao et al., 2004b). It is then much easier to establish what kind of interventions are likely to be effective (Marcus & Simkin, 1994; Prochaska et al. 2008; Xiao, et al. 2004b).

**Figure 2.3** Processes of change that mediate progression between the stages of change (Prochaska & Velicer, 1997)

Pre-contemplation	Contemplation	Preparation	Action	Maintenance	Termination
	Consciousness-raising Dramatic relief Environmental re-evaluation Self-re-evaluation	Self-liberation	Counterconditioning Stimulus control Contingency management Helping relationships		

As shown in **Figure 2.3**, it can be assumed that people who are in the lower level of stages of change may require all 10 processes to significantly change their behaviour to reach the final stage. In contrast, while planning interventions for those who are at the later stages, perhaps several processes are unnecessary.

### **2.7.3 Self-efficacy, temptation and decisional balance**

The TTM also includes self-efficacy, temptation and decisional balance as other constructs that promote interaction between the stages of change and processes of change. Self-efficacy, in the context of the TTM has been referred to as “an individual’s confidence that he or she can engage in a positive behaviour, or abstain from engaging in a problem behaviour across a broad range of specific, salient situations” (Marcus & Simkin, 1994, p. 1401). It is a construct that can influence behaviour change by affecting people’s choice, effort, expenditure, thoughts, and emotional reactions (Lenio, 2006; Marcus & Simkin, 1994; Prochaska & Velicer, 1997; Prochaska et al. 2008; Velicer et al., 1998). Self-efficacy is a predictor of relapse, whereby people who see themselves as good at dealing with internal and external pressures are more likely to resist regression (Prochaska & DiClemente, 1982; Velicer et al., 1990). But, when regression occurs, Velicer et al. (1990) suggest that the situation can be explained based on three characteristics of different clusters, namely: affect, particularly negative affect; social situations, i.e. whether alone or with others; and physical craving, involving both withdrawal symptoms and physical response to cues (the latter coming most specifically from health interventions).

Temptation refers to the intensity of urges to engage in a specific behaviour when in the midst of difficult situations (Lenio, 2006; Prochaska, et al., 2008; Velicer, et al., 1998). In the research on health behaviour, negative affect or emotional distress, positive social situations, and craving were found to be the most common types of tempting situations that encouraged behaviour change (Prochaska, et al., 2008; Velicer et al., 1998). Based on empirical studies in health therapy, it was suggested that temptation is the converse of self-efficacy in effect across stages of change (Lenio, 2006; Prochaska, et al., 2008; Velicer, et al., 1998). The studies show that, during the earlier stage of change, temptation is highest, but self-efficacy is lowest, and *vice versa* (Lenio, 2006; Velicer et al., 1998).

Decisional balance reflects the individual's relative weighing of the pros and cons of changing the behaviour, and the cost of changing the behaviour (Lenio, 2006; Prochaska & Velicer, 1997; Prochaska et al., 2008; Velicer et al., 1998). This definition of decisional balance derives from Janis and Mann (1977) and consists of eight sub-constructs: instrumental benefits for self, instrumental benefits for others, instrumental cost to self, instrumental cost to others, approval from self, approval from others, disapproval from self and disapproval from others. However, as a result of a comparative analysis, there are only two factors that are commonly used for measuring decisional balance in the TTM. These are pros and cons (Lenio, 2006; Marcus & Simkin, 1994).

#### **2.7.4 Applications of the Transtheoretical Model in previous studies**

The TTM of behavioural change was originally introduced by Prochaska, and DiClemente in relation to health therapy – particularly to studying smoking behaviour (Prochaska & DiClemente, 1982; DiClemente & Prochaska, 1982). It was developed through a comparative analysis of more than 300 theories of psychotherapy and behaviour change (Prochaska et al., 2008; Prochaska & Velicer, 1997; Velicer et al., 1998). Perhaps because the model is integrative, it has been used in health studies quite extensively. In addition to smoking behaviour, there is also a wealth of studies that have adopted it to understand other health and mental health behaviours. Among these are smoking cessation, physical activity, dietary change, multiple lifestyle changes, screening mammography, treatment adherence, prevention, and potential sources of heterogeneity (Bridle et al., 2005). Those studies that have used the TTM have found it to be particularly useful in determining intervention programmes to address the unhealthy behaviours.

Recently the use of the model in empirical studies has expanded to include other fields. A few studies were found using this model to investigate financial behaviour (e.g. Shockey & Seiling, 2004; Xiao et al., 2004a; Xiao et al., 2004b) and, of importance to this study, environmental behaviour (e.g. He, Greenberg & Huang, 2010; Howell, 2012; Mair & Laing, 2013) which I will now discuss.

He et al. (2010) adopted the TTM for investigating environmental behaviours that are related to the issues of global warming and climate change. In their study, the adoption of

this model was driven by their concern about the problematic idea that 'one-size-fits-all' when seeking to address the environmental issues. In line with the concept of stages of change in the TTM, He et al. (2010) suggest that individuals at different stages of readiness, willingness and ability to change require different sorts of feedback. As a result, the study proposes specific strategies to deal with global warming and climate change issues; the strategies are proposed in order to target individual attitudes, beliefs and values held at each of TTM's stages of behaviour change (He et al., 2010).

Similarly to He et al., (2010), Howell (2012) also adopted the TTM for studying environmental behaviour change with regard to the issue of climate change. In particular, Howell's (2012) study identifies the processes of change employed or depicted in a number of films, namely 'The Day After Tomorrow, An Inconvenient Truth, The Age of Stupid', and 'Just Do It'. The study sought to discover the extent to which the films were effective as sustainability communications in encouraging viewers to change their environmental behaviour. The findings of the study indicated that the films had provided the viewers with cognitive and affective processes but with little effect on behavioural process. Consequently, Howell (2012) concluded that such messages about environmental issues from films fit the earlier stages of the TTM.

Mair and Laing's (2013) study is particularly conducted in the area of sustainable tourism. The study used the TTM to explore how a sustainability-focused community event in Australia encouraged environmental behaviour change among the attendees. The findings of the study indicated that, in terms of processes of change, the event helped relationships, counter-conditioning and stimulus control. The data show that the attendees of the event were among those who already significantly committed to sustainable behaviour such as monitoring energy use, separating waste and recycling, or in the stage of preparation; they used the event as a source of encouragement for a further environmental behaviour change (Mair & Laing, 2013).

This section on the TTM provided me with a different view about behavioural change. Although the model was originally proposed in the field of health psychology, its considerable theoretical power comes from its holistic framework because it includes both psychological and social perspectives. This is in line with the literature I sourced to review the concept of environmental education and continuity of experience, which clearly

suggests that any educational intervention intended to elicit behaviour change should include not only psychological process but also social processes. In addition, it helps to show that one-off experiences are unlikely to make lasting change, while providing a framework that allows connections to be made over a longer period in people's life cycles. This is unlike many existing models of environmental behaviour change that suggest change as a linear process, as if to suggest environmental behaviour change may occur as a result of a single learning experience.

## **2.8 Chapter summary**

Thomas (2013) suggests that a literature review should not only summarise the literature reviewed, but also provide levels of analysis and synthesis. I have sought to do this above and would like to offer some summary conclusions in a similar vein.

This thesis sets out to discover the extent to which ROEE programmes in Malaysia are able to promote environmental behaviour change among their participants. An extensive body of literature was reviewed during this study and this chapter presents the literature that is most relevant to the study and led to the formation of research questions. From this literature, three themes emerge: ESD, continuity of experience and environmental behaviour change.

Concerning the theme of ESD, the review of literature has covered the nature and development of environmental education and the associated concept of ESD from an international perspective, to review global trends, but also, from a Malaysian perspective, in order to provide particular cultural insights of the country in which the study will take place. In particular, I have provided an overview that shows the potential of environmental education to achieve behavioural change and to meet the goals set out by ESD.

I have also looked at a relevant theory relating to the concept of continuity of experience in order to more fully understand the practices of my intended research setting. The literature on continuity of experience shows how social processes may involve temporal sequencing of experiences, which require the learners to continuously reflect on the connections between experiences in various social contexts.

The factors and processes which drive environmental behaviour change include influential factors, stages of change and processes of change. The factors that influence environmental behaviour change have been discussed in the context of the adoption of appropriate environmental models. I subsequently introduced the TTM approach because it crosses boundaries that exist when psychological processes are reviewed without regard to sociological processes (and *vice versa*). In addition, the TTM approach enables behavioural change to be understood as a series of stages and processes, and, as such, this model is especially significant within this study. As it was the most comprehensive model to explain and encourage pro-environmental behaviour that I was able to find, I have used it as a theoretical framework for this study. The justification that led to this decision is discussed in the next chapter.

One further aspect that resulted from the literature review was that I was able to identify gaps that are worth exploration in this study. While the literature suggests the importance of continuity of experience, no empirical studies were found that have investigated the impact of ROEE programmes and their ability to promote environmental behaviour change in the participants, both during their stay but also throughout their life course. My extensive review of literature found this gap is particularly significant in the context of Malaysian ROEE, where there is an absence of exploration on this topic even although government policy is seeking to find educational responses to the problems identified by sustainability. Also, there is insufficient scholarly attention to the interplay between psychological or social factors in observing environmental behaviour change, as most existing studies discuss psychological and social factors separately. Despite the TTM being an appropriate model to address these gaps, very few studies in the field of environmental education and environmental behaviour change have adopted this model.

With a view to addressing these gaps, there were two research questions which guided the conduct of the current study:

- iii. What are the influences of ROEE courses on participants' environmental attitudes and behaviours?
- iv. How do participants' life experiences since the ROEE courses shape their environmental attitudes and behaviours?

In the light of the above research questions, the methodological approaches taken in this study for answering these questions are presented in the next chapter.

## Chapter 3      METHODOLOGY

### 3.1 Chapter overview

This chapter is organised in the following way. First, the research questions (**Section 3.2**) are repeated because research questions in any research study play a central role in shaping and informing all subsequent decisions concerning the most appropriate research design and data-gathering approaches. Informing this discussion is the notion of methodological congruence and how this has been achieved. Second, **Section 3.3** discusses reflexivity and how I have sought to be a reflexive researcher throughout the research process. Third, the overall research design (**Section 3.4**) is presented. The section begins by discussing the different research paradigms, examining the strengths and limitations of each, and discussing which were deemed appropriate in this research study and why this was the case. Attention then turns to the research methods that were adopted, and a detailed account of these procedures is provided (Savin-Baden & Major, 2013; Arthur et al., 2012; Punch, 2009). This subsection concludes with a justification of the qualitative research design in this study which draws on Charmaz's (2006; 2014) notion of constructivist grounded theory (**Section 3.4.2**), life history approaches (Uzzell, Gatersleben & White, 2010) (**Section 3.4.3**) and the Transtheoretical Model (TTM) (Prochaska et al., 1992) (**Section 3.4.4**). **Section 3.4.5** provides a detailed account of data gathering and methods adopted, and a rationale is given for decisions made. This section also focuses on sampling, and identifies both the strengths and limitations of the sampling procedures adopted. The section then focuses on data analysis, and on the ways in which the different data sets were analysed and how findings were interpreted. The analysis of the first Findings chapter (the vignettes) informed the analysis that is presented in the second Findings chapter, the thematic analysis. This is followed in **Section 3.5** by an account of how important concepts such as trustworthiness were considered to be. In this section generalizability and transferability are also discussed. Decisions made during data transcription and translation are also explained and justified. In **Section 3.6** key ethical considerations are explored and the steps taken to ensure that at each stage the research was conducted in an ethical manner are presented. The chapter concludes with a brief summary and points to the Findings chapters which follow.

### **3.2 Research questions**

The review of the literature in **Chapter 2** has revealed that, while there have been many interesting and relevant studies conducted which have focused on ROEE, despite a detailed search, none have been found which evaluate the effectiveness of ROEE in a Malaysian context. This study, therefore, set out to begin to fill this gap in the existing literature. The study investigates the experience of environmental behaviour change among former participants of Malaysian ROEE courses when they were at school. In particular, this study focuses on how the environmental attitudes and behaviours of the participants may or may not have changed as an outcome of their participation in the course; and how their subsequent life experiences influence the change complementarily or separately. The research questions are:

- v. What are the influences of ROEE courses on participants' environmental attitudes and behaviours?
- vi. How do participants' life experiences since the ROEE courses shape their environmental attitudes and behaviours?

These research questions were arrived at in two ways. Initially they were devised as a result of the gaps which were identified in the current literature but were also modified as the empirical work proceeded (Punch, 2009). A detailed account of the ways in which the research questions developed and were modified as the research proceeded is given in **Section 3.3.2** where grounded theory is discussed.

### **3.3 Reflexivity**

In the previous section, I presented the methods of data gathering in this study, including how the data gathered at each stage were analysed. Attention now turns to the concept of reflexivity and how I have sought to be a reflexive researcher at each stage of the research process.

In the literature I have reviewed, the concept of reflexivity is discussed from the perspective of critical approaches to psychology. According to Finlay (2002), Gentles et al.

(2014), Savin-Baden and Major (2013) and Shaw (2010), reflexivity concerns the position of researchers and the influence they have on their own research. It is "... the project of examining how the researcher and intersubjective elements impinge on, and even transform, research..." (Finlay, 2002, p. 210). Reflexivity emphasises the strategies that are adopted to interrogate the researchers' own feelings, attitudes, thought processes, values, perceptions, assumptions, prejudices and habitual actions, to allow the researchers to understand their impact on a research project (Bolton, 2009; Darawsheh, 2014). Reflexivity does not equal reflection, although reflection is also important in conducting research. Reflection, or being reflective, refers to an in-depth consideration of events or situations by the researchers, for example, by reliving and re-rendering who said and did what, how, when, where, and why (Bolton, 2009).

Sherif (2001) argues that knowledge is produced within a particular historical and social context and that the reflexive researcher is required to consider the crucial issue of rapport: who is the researcher, who is being researched, how is a relationship to be established, and what power issues are involved? This is because the process and product of research may become political, personal, and experiential (Sherif, 2001). As I adopted constructivist grounded theory and a life history approach, these questions are particularly relevant for the current research study. Below, I provide an account of the steps that I took to ensure that this research was conducted in a genuinely reflexive manner. I aimed to engage in what Finlay terms 'explicit self-aware meta-analysis' (Finlay, 2002).

Many theorists believe that reflexivity is important while planning and conducting data gathering and analysis (e.g. Shaw, 2010). However, Finlay (2002) and Langdrige (2007) suggest that researchers should be reflexive in their research at every stage of the research. For example, Langdrige (2007, p. 59) provides a list of questions, which are presented in **Table 3.1**, to guide researchers to be reflexive in their research from the beginning stages when they are selecting the topic or issue they intend to investigate.

**Table 3.1** Questions to encourage a reflexive approach to research

<b>Questions to encourage a reflexive approach to research</b> (Langdrige, 2007, p. 59)	
1.	Why am I carrying out this study?
2.	What do I hope to achieve with this research?
3.	What is my relationship to the topic being investigated? i. Am I insider or outsider? ii. Do I empathise with the participants and their experience?
4.	Who am I, and how might I influence the research I am conducting in terms of age, sex, class, ethnicity, sexuality, disability and any other relevant cultural, political or social factors?
5.	How do I feel about the work?
6.	How will my subject position influence the analysis?
7.	How might the outside world influence the presentation of findings?
8.	How might the findings impact on the participants? i. Might they lead to harm and if so, how can I justify this happening?
9.	How might the findings impact on the discipline and my career in it? i. Might they lead to personal problems, and how prepared am I to deal with these should they arise?
10.	How might the findings impact on wider understandings of the topic? i. How might my colleagues respond to the research? ii. What would the newspapers make of the research? iii. Does the research have any implications for future funding (of similar research and/or related organisations)? iv. What political implications might arise as a result of the research?

As the thesis progresses, I provide answers for most of these questions. Finlay (2002) reminds us that accounts of the rationale for, and practice of, reflexivity in research can be competing and overlapping; however, each question has been considered and answered. In some instances, however, additional information on my influence on the research was required and this is provided in the section that follows.

### 3.3.1 The influence of the researcher on the research

Considering whether the researcher is an insider or outsider is one of the ways to discuss how the researcher may influence his/her research. According to Dwyer and Buckle (2009) a researcher is considered an insider if he/she shares the characteristics, role or experience under investigation with the participants. Otherwise, he/she is an outsider. My own position is that I was both an insider and an outsider, and this situation influenced me as a researcher. Because I adopted a constructivist grounded theory approach, I believed that my perspective as an insider researcher would be helpful. However, being an outsider researcher at the same time meant that I did not significantly influence the research study. In the paragraphs that follow, I describe in what ways I consider myself to be in these two different positions.

#### i. Being an outsider researcher

As mentioned earlier in the **Introduction**, I do have some experience whereby I was unofficially involved in a number of ROEE courses when my mother was working at a residential outdoor recreation centre. I also observed two courses when I was working at a research institution for environmental studies. However, I have never been a participant in any ROEE course. For this reason, I regard myself as an outsider researcher. Neither of these experiences could be said to be of the same kind as of those who have attended an ROEE course.

While participating in the ROEEs at my mother's work place, the age of the participants for each of the courses was different. There were courses for primary school students, secondary school students and university students. The courses that I joined unofficially were not necessarily commensurate with my age at that time. In addition, I did not participate fully in the courses but only in certain activities. Thus, I was not fully aware of all of the details of the courses and the experiences that they provided for their participants. Similarly, with regard to the ROEE courses that I observed later in my career, the observations that I conducted were also different from the perspectives of the participants, given that my role in the courses was as a researcher.

ii. Being an insider researcher

My position as an insider researcher was influenced by my own life experiences. Both being a Malaysian who had lived in Malaysia for 25 years before moving to Edinburgh to pursue my Ph.D., and having an academic background, as I graduated with Bachelor's and Master's degrees in Education, made me an insider. Since this research was conducted within the context of Malaysia, each of these made me an insider researcher. This enabled me to understand the data in ways which an outsider could not.

Firstly, my academic background in education had developed my ideas about what could be expected from an educational programme such as ROEE which I am investigating in the current research. Then, while planning and conducting interviews, I used my extensive knowledge of the social context of the study and my personal experience of living and studying and working in Malaysia – and living overseas – to formulate the interview questions, including prompting and probing questions. The process of data analysis was also influenced by this insider position. This position is helpful when conducting abductive data analysis from actors' social and intellectual positions (Timmermans & Tavory, 2012). This is because abductive data analysis allows the researcher to entertain all possible explanations for the data gathered before they are interpreted in the most plausible ways (Charmaz, 2006; Roulston & Shelton, 2015), including the possibility that the interpretations are influenced by the researcher's background, beliefs and experiences.

Being an insider was also an advantage at the stage of presenting the findings, particularly when translating the extracts of data. I provide a detailed account of this in **Section 3.4.5.4**. In addition, I became more sensitive to possible ethical issues that might arise while conducting this research. I not only considered them from the perspective of carrying out social research in general, but also focused on the ethical issues of the specific social context, which is Malaysia.

Being both an outsider and an insider researcher enabled me to carry out the research more critically. In addition, I adopted a further approach to balance my relationship with the topic being investigated through using debriefing sessions. Debriefing is a technique which was used to enhance the trustworthiness of this study. It decreases the potential of

bias when I was analysing and reporting findings to allow others to scrutinize and examine my work and my role as a researcher, and I followed closely the approach outlined by Guba (1981), Maritz & Jooste (2011) and Yin (2011). According to Yin (2011, p. 19), “the scrutiny can result in criticism, support, or refinement”. The purpose of examining carefully my role as a researcher was to ensure that I reflected deeply upon my situatedness, assumptions, actions and interactions to ensure that the research integrity within the study could be trusted.

The debriefing sessions involved my academic supervisors and my colleagues, where some of them were insiders, who had prior experience of the topic and the context of my study, while the others were outsiders with little or no exposure to the topic and the context. The discussions with groups of impartial peers helped me to develop ideas and interpretations and to recognise my own biases and preferences that could possibly be influenced by my insider and outsider positions.

In addition, details of the background and the context of the study are provided throughout the thesis. Such information was provided in order to familiarise readers with the specifics of the context which are relevant to all the claims that are made in the interpretation of the data (Roulston & Shelton, 2015). Detailed descriptions of the context of the study demonstrate that the values that I brought to my interpretation of the research data were not merely influenced by preconceptions from my personal background and experiences. Rather, as Letherby, Scott and Williams (2012) remind us, the interpretation of research data may be influenced by the values that are learned through the act of being reflexive.

### **3.4 Research design**

To allow me to investigate the research topic in some depth, and to find answers to the research questions, the following research design was devised. It comprises four stages. It is important to note that these are not free-standing and separate stages, but rather that each stage influenced and informed the subsequent stage, in an integrated and iterative manner.

Stage 1: Documentary analysis

Stage 2: Survey questionnaire

Stage 3: Interview study: exploratory

Stage 4: Interview study: main study.

The four-stages-research design was the result of my decision to conduct qualitative research, drawing on grounded theory, a life history approach and the Transtheoretical Model (TTM) to inform both the design and to provide an appropriate conceptual framework for the research. A full account of the design is provided in the following sections.

### **3.4.1 Qualitative research**

In **Section 1.6**, I explained how this study was framed by a constructivist research paradigm. In the research literature, qualitative methods are often described through the lens of constructivist approaches (Arthur, et al., 2012; Feilzer, 2010). Quantitative methods are used to describe methods that are underpinned by positivist assumptions (Feilzer, 2010; Punch, 2009). While this suggests that ontological and epistemological beliefs usually restrict the research design, Christ (2013) and Levers (2013) argue that research paradigms should not be conceived as simple, rigid and law-like. Rather, according to Levers (2013, p. 3):

...there is epistemological latitude within ontological delimitations...  
believing that a world exists independently of awareness does not  
necessitate that meaning exists in the same way....

While heeding this warning to avoid viewing research paradigms as simple concepts, the decision was made within this current research to adopt a qualitative approach. In this current section, I explain and justify this decision.

My decision to adopt a qualitative research design and approach stems from the lessons learned from the prevailing paradigm wars that have occurred at least twice since they began in the 1980s or earlier (Creswell, 2014; Creswell & Clark, 2011; Denzin, 2008; 2010; Johnson & Christensen, 2008; Punch, 2009). One reason for the wars was the tendency for

researchers to choose both the research design and methods based on the nature of the research problem (Brannen, 2005), rather than focusing on the research questions and considering the most appropriate ways to begin to find answers. Many researchers adopted a polarised position - they were either quantitative or qualitative researchers, and the two approaches were seen as incompatible and could not be used together (Denzin, 2010; Johnson & Christensen, 2008; Punch, 2009). Therefore, there was a clash of opinion between qualitative and quantitative purists. Each argued that their approach was superior (Denzin, 2010; Johnson & Christensen, 2008). At that time, when quantitative methods were dominating educational studies, ideologies of naturalism, interpretivism and critical theorism began to emerge and this turned the tide and led to criticisms of purely quantitative studies (Denzin, 2008). These arguments were based on concerns about the struggles for power and cultural capital for the poor, non-whites, women and gays (sic) (Denzin, 2008; Gage 1989) which emerged from research studies undertaken at that time. However, in the late 1990s, the second phase of the paradigm wars occurred, which resulted in quantitative methods beginning once again to dominate research methods in education. This was then followed by the third war in the post-1990 period when these purist ideas were challenged by those who believed that a study could combine both quantitative and qualitative approaches through triangulation, an idea which led to mixed-method approaches being adopted (Denzin, 2010). However, those who challenged this approach argued that some researchers wove quantitative and qualitative approaches together without taking due account of the most appropriate balance between the two approaches in a mixed methods study (Field, 2017). Discussing this issue, Creswell (2007) and Collin, Onwuegbuzie and Jiao (2007) introduced the terms 'nested', 'concurrent nested' or 'embedded' research, terms which sought to allow researchers to determine the degree to which quantitative and qualitative methods were adopted in a particular research design (Creswell, 2007; Collin et al., 2007).

I decided on the most appropriate research design for this study based on my critique of the literature introduced in the preceding paragraphs and my belief that I should not be confined by the idea that the research design must be completely polarised, or that a mixed method approach would be the 'safest' option. Quantitative, qualitative, and mixed method were all considered. Following arguments made by Doyle, Brady and Byrne (2009), Feilzer (2010) and Johnson and Onwuegbuzie (2004), this study is based on the perspective

of pragmatism that is concerned with results and solutions rather than processes that call for reflexive practices. The rationale for this way of working is that the approaches adopted would meet my needs and purposes as the researcher and allow for the best approach to answer the research questions (Creswell, 2014; Brannen, 2005; Feilzer, 2010; Johnson & Onwuegbuzie, 2004).

Following the pragmatist approach, I returned to and re-examined my research and the research questions in **Section 3.2**, which subsequently led me to the decision to conduct this study by using qualitative research approach. The justification for this decision is based on the fact that I devised research questions which would begin to fill the gaps of knowledge on ROEE in a Malaysian context. Based on my extensive reading of the literature, there are no studies that have investigated the impact of ROEE in Malaysia. With this regard, I deemed that a qualitative methods design was appropriate as it would offer subjective insights that take into consideration Malaysian social influences in the meaning-making process. This method allowed me to gather findings that were concerned with behaviour and meaning (Arthur, et al., 2012; Brannen, 2005; Punch, 2009; Silverman, 2011). Qualitative methods were the most appropriate approach because of their ability to describe a phenomenon that is locally constituted (Silverman, 2011) in the Malaysian context. It has been noted that the central focus and interest of this study is investigating the settings in which the programmes were delivered, and it has also been made clear that this study is influenced by the standpoint of constructivists who argue that reality and knowledge are subjective and are socially constructed (Arthur, et al., 2012; Feilzer, 2010), which made me deem that the quantitative design is not appropriate. In addition, a qualitative approach allowed me to use inductive, deductive and abductive approaches to data analysis and would, in my opinion, therefore provide a richer and fuller picture of the situation from the participants' perspectives and in a specific context without quantitative data. To conclude, the reason I decided to adopt a qualitative method approach was that such an approach allowed me to draw on the best methods for answering the research questions.

### 3.4.2 Grounded theory

Grounded theory is a systematic method of data analysis that provides flexibility for researchers to construct theories which are grounded in, and emerge from, their data (Charmaz, 2014; Strauss & Corbin, 1994). Breckenridge et al. (2012, p. 64) note, “researchers deciding to use grounded theory are faced with complex decisions regarding which method or version of grounded theory to use: classic [or Glaserian], Straussian, feminist or constructivist grounded theory”. Out of these versions of grounded theory, I adopted Charmaz’s (2003; 2011; 2014) constructivist grounded theory in this study for the reason that I will now justify.

According to Walker and Myrick (2006) the main differences between more traditional conceptualisations of grounded theory and constructivist grounded theory are centred on the researcher’s role, activity, and level of intervention in the empirical processes of a study. Glaser’s original concept of grounded theory was described from the perspective of a positivist (Glaser, 1998), and in 2004 he defined grounded theory as procedures based on the constant comparative method, which results in a smooth uninterrupted emergent analysis (Glaser & Holton, 2004). In contrast, Strauss approached the concept of grounded theory from the perspective of a pragmatist, whereby grounded theory was used to uncover conditions, as well as to determine how the researchers actively respond to these conditions and to the consequences of their actions, by building change into the method throughout its process (Corbin & Strauss, 1990). In that sense, the researcher’s responsibility for identifying this interplay is recognised.

Charmaz (2003; 2011; 2014), with her account of constructivist grounded theory, offers an alternative to classic grounded theory (Glaser, 1978) and Straussian (Strauss & Corbin, 1990) grounded theory. She argues that constructivist grounded theory allows researchers to take “a middle ground between postmodernism and positivism and offers accessible methods for taking qualitative research into the 21<sup>st</sup> century,” (Charmaz, 2003, p.250). Constructivist grounded theory allows researchers and analysts to recognize and acknowledge that there are multiple social realities, and that knowledge is created by interaction between the researcher and the participants in research through a process of interpretation of participants’ meanings. In this way the participants’ voices are heard. In contrast to the traditional grounded theorists who valued objectivity, the term

constructivist is used “to acknowledge subjectivity and the researcher’s involvement in the construction and interpretation of data” (Charmaz, 2014, p.14).

As I followed Charmaz’s method of constructivist grounded theory, I was able to go beyond the surface-level of analysis in seeking meaning in the data by immersing myself in that data. Interaction between myself as the researcher and the participants involved an extensive and intensive analysis of data in an iterative cycle of induction, deduction and abduction, at Charmaz’s (2012) suggestion. The iterative process reflects the basic tenet of grounded theory – and it is an approach which provides flexibility to researchers in answering their research questions (Charmaz, 2012; 2014; Glaser & Holton, 2004). While inductive and deductive reasoning and inference making have long been used in quantitative and qualitative research to develop and refine existing knowledge, abductive reasoning in grounded theory is perceived as the only true means of extending knowledge (Bryant, 2009; Charmaz, 2014). According to Charmaz (2006, p. 188) “[abductive reasoning is] a type of reasoning that begins by examining data and after scrutiny of these data, entertains all possible explanations for the observed data, and then forms hypotheses to confirm or disconfirm until the researcher arrives at the most plausible interpretation of the observed data”. Consequently, abductive reasoning allowed me to produce explanations of how Malaysian ROEE courses impacted on the participants’ views, attitudes and their environmental behaviour change, themes which has not yet been studied.

As Suddaby (2006) discusses, grounded theory from this perspective would rely on my sensitivity in capturing tacit elements of the data that may be ambiguous from a superficial reading of denotative content. Moreover, this study was not conducted without any preconceptions on my part. Adopting Charmaz’s constructivist grounded theory approach within the current study allowed me to approach the process of analysis, as described by Dey (2007), not with ‘an empty head but with an open mind’. While the careful review of the existing published literature had alerted me to key ideas and concepts, I made careful use of what Blumer (1956) termed ‘sensitising concepts’. Blumer argues that researchers bring to the data analysis process existing beliefs and understandings which make them alert and sensitive to findings which emerge and interpretations of these findings; however, they are also aware that concepts will emerge from the data. Therefore, as I approached the task of gathering and analysing the data, at all times I remained alert both to the

concepts and ideas which I took to the process as well and those which emerged from the data.

As I mentioned above, a full and detailed account of how constructivist grounded theory which internalised the characteristics of inductive, deductive and abductive analyses was used at each stage of the research is provided in later sections of this chapter. In the sections which follow, life history research, and the ways in which this complemented constructivist grounded theory as the main theoretical framing approaches, are discussed.

### **3.4.3 A life history approach**

Principally, life history approach elicits research participants' perceptions from a lifespan perspective. It is a method that allows researchers to focus on an issue and gather data from participants' biographies by inviting them to look back in detail across the course of their entire lives (Bryman, 2001). In term of its usefulness, Uzzell et al. (2010, p. 7) argue that:

Life histories permit the examination of the ways in which people remember and interpret their values, practices, and preferences, and how these have developed over time and why, against the backdrop of other historical data. This then allows us to understand how people have experienced and interpreted events and changes within their lives, in the context of broader societal developments.

My decision to use a life history approach can be justified for several reasons. Having reviewed the literature in **Chapter 2**, and during the initial phases of the data collection and analysis, I became more aware that changing one's behaviours can take quite some time. The ROEE experience on its own may have had *some* impact on the participants' learning about the environment. However, this impact may or may not be to the extent that the participants changed their environmental behaviours. In those instances where ROEE experiences do not result in behavioural change, the literature (e.g. Brown, 2010; Dewey, 1938; Kendall & Roger, 2015; Telford, 2010) suggests that continuity between a ROEE experience and other subsequent experiences is required. This highlights the importance of the backward and forward connections between experiences in the past, the present and the future with varying levels of impact on learning (Dewey, 1938). Consequently, a key

focus in the current research became to gather participants' views on the extent to which the ROEE courses they took in Malaysian schools impacted on their views, attitudes and subsequent life choices with regard to environmental behaviour change. Life history research therefore appeared to be a particularly useful approach to adopt as it allowed me to observe the change processes over a considerable time span, and one which would complement the constructivist grounded theory approach described in the previous section.

Further, a life history approach was believed to be particularly appropriate for this study because, as Steg and Vlek (2009) note, "it is important to monitor (changes in) environmental impact, since this is the ultimate goal of behavioural interventions in the environmental domain" (p.314). Indeed, a long-term commitment to environmental issues for present and future generations has been recognised as an important outcome to be achieved in ESD (Haigh, 2006; Vaughan et al., 2003). The long-term commitment is necessary to meet the demands of ESD (Lugg, 2007), in which the development of environmental generic skills that include environmental behaviour is encouraged for learning not just for the needs of the present time but also for our future. Gathering and analysing data from participants' life history accounts not only helped me to understand how they interpreted and used their past experiences to meet the challenges of the present but, importantly, they also allowed me potentially to anticipate the future (Chawla, 2006) and to inform other researchers and policy makers (Steg & Vlek, 2009). The main idea is that, if the significant experiences that lead to the environmental behaviour change can be identified, the goal of ESD can be enhanced and improved by adding these experiences in educational programmes or courses (Eilam & Trop, 2012) such as ROEE.

My decision to adopt a life history approach for observing environmental behaviour process within a longer time span was also influenced by the recommendations made by Steg and Vlek (2009) and Hards (2012). Steg and Vlek (2009) called for a shift of attention from studies that focused on informational strategies, which tend to be short-term, to longer-term studies. The authors argue that the shift would enable the studies to address structural strategies for promoting pro-environmental action, and to aim at changing the circumstances under which behavioural choices are made. This recommendation reflects Hards's (2012) argument on the gap that is left by social-psychological models that usually focus on a one-off event, and neglect the changes that subsequently occur as a result of such an event. Note that informational strategies are the strategies which can be aimed to

increase actors' knowledge to deduce whether intervention programmes were successful or not, and how interventions – such as ROEE – might be adapted to increase their effectiveness (Steg & Vlek, 2009). Structural strategies, on the other hand, “are aimed at changing contextual factors... [and] are more effective in encouraging pro-environmental actions” (Steg & Vlek, 2009, p. 314). In addition, Hards (2012) warns us that if behaviour is changed, the change may not endure unless the factors that promote its maintenance or reversion are accounted for. Therefore, it is important to know how the outcomes of ROEE might be adapted in a way that is grounded in participants' daily routines to increase their durability.

A cross-sectional approach could be an alternative way to study structural strategies for developing pro-environmental action and the processes which brought about environmental behavioural changes which influenced people's quality of life that I noted above. Previous studies that have investigated the long-term effects of environmental programmes, including those that specifically examine behavioural changes in participants, have often used a cross-sectional approach (e.g. Bogner, 1998; Farmer, Knapp & Benton, 2007). Cross-sectional research involves data collection at a single point in time, or during a single, relatively brief time period (Johnson & Christensen, 2008). In addition, data for cross-sectional research are collected at the same moment in time, with samples that share common characteristics (Thomas, 2013). However, I chose life history approach because it offers a higher probability of uncovering more changes that may occur over a longer period of the participants' lives. Both approaches, life history and cross-sectional research study life span development retrospectively. However, in most of the previous cross-sectional studies, data collection usually took place shortly after the end of the programmes. Bogner's (1998) study had the shortest time lapse: the post-treatment evaluation of an environmental education programme was conducted one month and six months (for a subsample) after the participants had experienced the programme. Farmer et al. (2007) delayed their interviews with the participants for one year after the intervention. In contrast, the life history approach allows data to be gathered following a significantly longer period of time, and thus changes that occur over this longer period can be identified and explored. For example, Gass, Garvey and Sugerman (2003), Takano (2010) and Telford, (2010), used life history research to investigate the impact of an intervention on

environmental behaviour change and collected their data after 17 years and 20-23 years respectively.

In studies in the field of environmental education, there are several other terms that have been used to describe research that adopts the life history approach, such as 'significant life experience' (Tanner, 1980; Chawla, 2006) and 'transformative moments' (Hards, 2012). Significant life experience was defined as "exchanges between the 'outer environment' of the physical and social world and the 'inner environment' of people's own interests, aptitudes, and temperament" (Chawla, 2006, p. 369), while a transformative moment is "an experience occurring during a short time-period which results in a significant change in pro-environmental practice" (Hards, 2012, p. 763). However, most of these studies, especially those that adopted the approach of identifying significant life experiences, only look to a specific event that became a turning point in the participants' environmental behaviours, without associating that event with other events (e.g. Ceaser, 2015; Hsu, 2009; Li & Chen, 2015). In contrast, in the present study, I chose to use a life history approach to focus on how a specified experience – the participants' experiences of ROEE during their schooldays – developed their pro-environmental action across their lifetime, possibly mediated by their other life experiences. This was because an environmental intervention programme may not result in the development of pro-environmental behaviours over a short period of time, but rather, through the creation of continuity of experience (Dewey, 1938).

As is the case with all methodological approaches, there are also some limitations to this approach, for example, the type of data which is collected, how that data is collected, and sampling decisions. The final two limitations are discussed in later sections of this chapter. However, perhaps the most significant of these is the memory-based data which was collected and analysed, and it is therefore to this that attention now turns.

Several writers have argued that there are clear advantages to using participants' autobiographical memories as key sources of research data. Within this tradition, memory is not castigated for its unreliability but celebrated because, as Chang (2008, p. 71) states: "the past gives a context to the present self and memory opens a door to the richness of the past". For researchers from this tradition, quite simply, memories are data. For the current research the environmental behaviour change studied can be described in terms of a broad outline of life events and their significance over time can be tracked and

highlighted (Chawla, 2006). This current study, therefore, has the potential to identify the changes that occurred in both the short- and long-term for the participants. Secondly, memory research provides me an opportunity to describe participants' lived experiences which are based on their interpretations and constructions, which in turn are influenced by their life identities, (Chawla, 2006), or by social factors which shaped and influenced such identities and experiences. Thirdly, gaining this knowledge not only helped me to understand how participants interpreted and used their past experiences in responding to the challenges of the present but, in addition, also allowed me to some extent to anticipate their future attitudes and behaviours (Chawla, 2006; Husserl, 1990; Ricoeur, 1985; 1988). This is because, it can be argued, a life history approach draws on the concept of the 'representative function of the historical imagination' in which I can learn to examine a past series of events and, in light of such events, imagine and interpret a new future (Ricoeur, 1985; 1988). As Mead (1929; as cited in Jackson, 2010, p. 129) notes:

The past which we construct from the standpoint of the new problem of today is based upon continuities which we discover in that which has arisen, and it serves us until the rising novelty of tomorrow necessitates a new history which interprets the new future.

Findings that have the potential to point to the future would be very useful for other researchers and policy-makers (Steg & Vlek, 2009). As will become clear in the findings chapters, where significant experiences that led to environmental behaviour change are reported, I believed it may indeed be possible through this study to imagine a future in which continuous improvement could be made to ROEE programmes, and thus enhance the overarching goals of environmental education (Eilam & Trop, 2012).

However, the use of autobiographical memory in this study can also be a controversial and much disputed approach, particularly with regard to the trustworthiness of the data. This is especially the case when data were gathered concerning experiences that happened quite some time in the past. In addition, it could also be argued that, if the participants were required to recall details of events which were sudden or unexpected or which occurred on the periphery of their attention, their awareness of their self-knowledge may be limited, which would compromise the trustworthiness of the data (Barker, Pistrang & Elliott, 2002; Chawla, 2006). The key issue here is whether – and to what extent – autobiographical memory is viewed as 'truth', rather than a version of 'truth' which recounts participants' past lived experiences as accurately as is possible.

Despite such criticisms, Ricoeur (1985) strongly defended the fidelity of autobiographical memory, and argued that it does indeed have the value of semblance. While memories are often inaccurate with regard to the precise details of an event, they are usually accurate about the general course of events and they remain vivid if they are highly significant to a person (Chawla, 2001). In addition, according to Ricoeur (1985, p. 13):

... verisimilitude is not just resemblance to truth but also a semblance of truth... If, indeed, resemblance is only a semblance of truth, what then is fiction under the rule of this semblance but the ability to create the belief that this artifice stands for genuine testimony about reality and life? The art of fiction then turns out to be the art of illusion. From here on, awareness of the artifice involved undermines from within the realist motivation, finally turning against it and destroying it.

While acknowledging the apparent weaknesses of life history approaches using memory based data, my decision was nevertheless made that the strengths of such approaches outweighed the perceived weaknesses, and, during the data gathering and data analysis stages of the research, steps were taken to minimise the possible impact of such weaknesses. These are outlined and justified in some detail in later sections which follow.

As a whole, by adopting a life history approach, this study was able to address the ability of ROEE to develop pro-environmental action through a holistic and contextual approach; to recognise that pro-environmental action is dynamic; and to acknowledge that pro-environmental action is a lived experience (Hards, 2012).

#### **3.4.4 Transtheoretical model**

Informed by the decision to conduct the study using a life history approach, I revisited the literature that had been reviewed and also explored additional literature. Through a reflexive process, I decided to use the Transtheoretical Model (TTM) to frame the current study, as the model engages with the temporal dimension of behaviour change through six stages of change – pre-contemplation, contemplation, preparation, action, maintenance, and termination (Lenio, 2006; Marcus & Simkin, 1994; Prochaska & DiClemente, 1982; Prochaska, et al., 1992; Prochaska, et al., 2008; Prochaska & Velicer, 1997).

The decision to use the TTM (and life history) helped me during the process of data analysis. An account of how the data analysis was conducted is provided in **Section 3.4.5.5**. Use of both the TTM and the life history approach, helped me to bring together data collected over time from a series of interviews with each participant, and provided a framework for both analysing and presenting the data so that the findings were presented in a logical and coherent manner. The TTM, with its six stages of change and 10 processes of change, suggests that behavioural change can be influenced by internal pressures or external (social) pressures or by both.

Analysis using the TTM allowed me to move away from viewing behaviour change from a psychological perspective whereby people in the research were viewed as objects. Rather, the model led the current study to view behaviour change from a sociological perspective, whereby people were seen as subjects. The need for this change was discussed by Vare and Scott (2007, p. 2) who suggest that ESD 2 (Education for Sustainable Development), which aims to build “capacity to think critically about what experts say and to test ideas, exploring the dilemmas and contradictions inherent in sustainable living” should complement ESD 1 which emphasises “the promotion of informed, skilled behaviours and ways of thinking, useful in the short-term where the need for this is clearly identified and agreed”. From my review of relevant literature, it is evident that previous studies, especially those that develop models of environmental action/behaviour, tend to discuss learning from a psychological perspective and do not include a focus on the social context in which learning occurs.

### **3.4.5 Data collection**

As Thurston et al. (2014) remind us, the focus on methodological congruence has gained more attention because of the need for careful planning to ensure overall coherence and a clear purpose for the different parts of a research study. In order to achieve methodological congruence, and to select the most appropriate methods of data collection which would allow me to answer the research questions, the complexity of the study, the goals of the study, and the research questions, were all taken into consideration. I also took great care to ensure that such methods were fit for purpose and flowed logically from the decision to use grounded theory and life history approaches to frame this study.

Constructivist grounded theory was chosen for this study because it involved data gathering in an iterative manner. As a result, research data were gathered from four separate but interrelated and complementary sources: documents; a survey questionnaire; exploratory interviews; and the main interviews that were conducted. The first three methods informed and shaped the key focus of the study, while the fourth method provided the main data which were used to answer the research questions. Before I describe the four methods of data collection below, I first explain and justify the sampling approach adopted in this study. Next, each of the four methods of data collection are described, and the ways in which they were used to achieve the key aims and purposes of the study are outlined.

#### **3.4.5.1 Sampling method**

In line with a life history approach, I first defined the whole possible population from which the sample would be drawn – all former participants in ROEE. Research participants were identified using convenience sampling. According to Marshall (1996), convenience sampling involves the selection of the most accessible participants. It is a sampling technique in which participants are chosen based on their convenience or availability and willingness to participate in the study (Bryman, 2012; Collin et al., 2007; Robson, 2011). However, some challenge this approach in terms of its rigour. It has been argued that the data gathered using this sampling approach may be poor in quality (Marshall, 1996). Farrokhi and Mahmoudi-Hamidabad (2012) suggest that the participants who are recruited using convenience sampling may constitute an extreme group of people (extreme in terms of any aspect) which does not allow them to be considered comparable to, or representative of, the wider possible population, and that this, therefore, undermines the trustworthiness of the study. Bryman (2012) and Robson (2011) both believe that the participants recruited in this way are not representative of the research population as a whole. However, despite these perceived limitations, this method of sampling was adopted because of the strengths that it offered to the current study.

Firstly, convenience sampling was adopted as the approach for this study because, as Morse (2006) argues, it is entirely appropriate for research which uses grounded theory. According to her, grounded theory research should locate 'excellent' participants to obtain 'excellent data' (Morse, 2006, p. 231):

An excellent participant for grounded theory is one who has been through, or observed, the experience under investigation. Participants must therefore be experts in the experience or the phenomena under investigation; they must be willing to participate, and have the time to share the necessary information; and they must be reflective, willing and able to speak articulately about the experience.

In the current study, these 'excellent' participants were gathered from former ROEE participants who had attended a course when they were at school. Secondly, an additional reason for adopting convenience sampling was that it allowed me to gather hard-to-reach participants. Marpsat and Razafindratsima (2010) define hard-to-reach participants or populations based on several criteria:

- a. the population of interest is limited in numbers or is hard to identify;
- b. a clear sampling frame is not defined;
- c. the population of interest is not known, which causes difficulties in deciding the distribution of places in which to approach them.

Adopting this approach prevented me from losing potential participants. Thirdly, I believed that using convenience sampling would not be problematic in the current study as I had conducted pilot studies. Piloting a research instrument to a group that is not part of the actual study was suggested by Bryman (2012) and Robson (2011) as a measure to reduce the threat of trustworthiness in convenience sampling. Details of the pilot studies are provided later in **Section 3.4.5.3**.

The sampling process was conducted through an online questionnaire survey. The online survey was circulated by emailing a research advertisement (**Appendix B**) to organisers of ROEE programmes. It was also published on a social media website, namely Facebook. Through both of these sources, the participants were directed through a link to a page with the online survey which had been developed using SurveyMonkey.

With regard to the first source, I made use of the internet browser and the websites of Malaysian Environmental Non-Government Organisations (MENGO) to identify institutions, organisations and bodies that provided programmes relevant to my study. MENGO is a coalition of 22 registered organisations. Organisations under this label share common aspirations to ensure the continuity of the country's path towards sustainable development

(MENGO, n.d.). MENGO's website was useful to me as it provides a list of its members. For some of the members, contact details are also provided on the website. However, there is no information available for some organisations. In these cases, the internet browser became useful.

I sent an email to 16 organisations from the 22 members of MENGO. As for the other six organisations, contact details were unavailable. In the email, I introduced myself and my study and then asked for their help in tracking the former participants on their programmes. Only three organisations responded to my request. Many organisations did not respond to the email, and two organisations refused to cooperate due to their internal policy that restricted information disclosure to studies that they thought were unrelated to their organisation. In addition, one organisation did respond to my email, but they claimed that they did not organise ROEE programmes for school students. Although three organisations gave positive feedback and agreed to help with this study, only two participants were finally recruited using this method.

With regard to the second source, namely Facebook, the virtual sampling method was adopted as I was influenced by the literature on the power of social media as a research tool. Depending on the way one communicates with others, Couldry (2012) suggests that intersubjectivity between humans through social media may be an advantage or disadvantage to a person's integrity. There has been a proliferation of literature that suggests that social media is a tool for gratification (McCay-Peet & Quan-Haase, 2017; Whiting & Williams, 2013). For example, the use of social media may be used for the purpose of "social interaction, information seeking, passing time, entertainment, relaxation, communitary utility and convenience utility," (Whiting & Williams, 2013, p. 364). The last purpose, convenience utility, best describes how this study was supported by the convenience and usefulness of social media. It was not only because social media has become an integral part of daily life; it was also because the key features of social media enabled me to collect large quantities of data globally and reach the hard-to-reach participants (McCay-Peet & Quan-Haase, 2017; Poynter, 2010; Whiting & Williams, 2013). In addition, social media provided flexibility for the participants to participate in this study at any time that was convenient for them (Poynter, 2010) and allowed me to post the research advertisement throughout the data collection time frame. In addition, I created the virtual survey through Facebook because this method, as argued by Baltar and Brunet's

(2012) study, has the ability to increase the response rate. Baltar and Brunet (2012) explain that an increased rate of response is the result of the transparency of the researcher's personal information on their Facebook profile, as well as participation in common groups of interest (Facebook groups).

I posted the online survey on various groups' Facebook pages that were both related and not related to the environment. By groups that are related to the environment, I mean groups such as the communities of environmental conservation volunteers, while the non-environmental related groups are groups such as colleges and universities, groups of alumni and other clubs and associations. Through these media, I published the online survey continuously during the three-month data-gathering period of this stage of the study.

#### **3.4.5.2 Documentary analysis**

As the research developed, an extensive body of relevant literature was reviewed. However, in addition to this thorough review of existing literature in the field, my developing understanding of the background against which the current research was placed and enhanced by documentary analysis. The kinds of documents that were analysed are discussed in the following paragraphs and decisions concerning the selection of documents, and the approaches used to analyse them, are justified.

Documents can contribute important and highly relevant secondary sources of research data to any research study. While the importance of documents has been recognised in professional publications, where they are routinely analysed and reported, this rich data source has tended to be neglected by researchers (Punch, 2009). Punch (2009) suggests that this may be the result of the kinds of documents that have been used and of a lack of convincing justification for their usefulness. Documents as sources of data for researchers can be in the form of personal documents, such as diaries, letters, and autobiographies; visual objects, like photographs; official documents; mass media output; and virtual outputs (Bryman, 2004).

In this study the central importance of documents has been recognised and such documents have been viewed as being equally as important as the primary sources. The

documentary analysis has made a significant contribution to this study, since it provided important information concerning the organisational settings within which the study was conducted, as well as about the cultural values that were attached to them (Atkinson & Coffey, 2006), which is an important element in a constructivist investigation. In addition, because this study adopts a life history approach, this allowed me to obtain key data about the chronology of the development of environmental education in Malaysia, about how the policy and the practice of environmental education had progressed, and about how environmental education had been implemented in line with national policies. All of the data gathered from the documentary analysis have provided me with important insights which have served both to deepen and broaden the discussion, particularly when I was deciding on the key focus of this study.

Two main types of documents were analysed: official policy documents and virtual outputs. The former can further be divided into general policy documents and educational policy documents. When discussing social research, Silverman (2014) uses the metaphor of the goldmine to describe the value of official documents because of their relevance to important issues and their ability to reveal how public and private account for, and legitimate, their activities. The general policy documents that were used were the series of Malaysian Plans (*Rancangan Malaysia*) which cover the period following the formation of Malaysia in 1963. Malaysian Plans are documents that set out the government's five-year plan for national development. Two five-year plans predate these: the First Malaya Plan (1956-1960) and the Second Malaya Plan (1961-1965). The latest plans, the national development plans, are documented in the Eleventh Malaysian Plan, which is an action plan that is to be executed between 2016 and 2020 (EPU, 2015). The significance of these documents for the current study is that they include an overview of the national focus on local environmental issues and education at specific periods of time. It is therefore possible to chart chronologically both how environmental issues and education have been addressed in documents over time and the impact that policy and implementation have had on practice. Although several Malaysian writers have written about these issues (e.g. Aminrad et al., 2012; Lateh & Muniandy, 2010; Pudir, 2006), despite a careful review of literature I have found no publications which referred to these types of documents. In addition, I felt that analysing the original documents was necessary as it might provide an opportunity for me to consider alternative explanations for the phenomena being studied

and reported. In addition, this study adopts a life history approach, and it is therefore important to know and understand the status of environmental education at the time the research participants participated in ROEE.

The main educational policy documents that were reviewed were the manuals for the implementation of environmental education across the curriculum that were issued by the Ministry of Education in 1998 and the Education Development Plan for Malaysia 2001-2010. Alongside the Malaysian Plan, these documents provide an explanation for the status of environmental education more clearly. Separate manuals for the implementation of environmental education across the curriculum were published for teachers in primary and secondary schools. The manuals provide very detailed suggestions for teaching environmental education for each topic in the formal curriculum/subjects at every level (year). The Education Development Plan for Malaysia 2001-2010 is a policy document which states very clearly what the focus on environmental issues within the education system should be.

In addition to these documents I also reviewed the the National Education Policy document (*Dasar Pendidikan Kebangsaan*) (Ministry of Education, 2012a); the Education Development Master Plan 2006-2010 (*Pelan Induk Pembangunan Pendidikan 2006-2010*) (Ministry of Education, 2006); the Interim Strategic Plan for the Ministry of Education 2011-2020 (*Pelan Strategik Interim Kementerian Pelajaran Malaysia 2011-2020*) (Ministry of Education, 2010); and the Malaysian Education Blueprint 2013-2025 (*Pelan Pembangunan Pendidikan Malaysia 2013-2025*) (Ministry of Education, 2012b). The functions and purposes of these four documents are very similar to the other documents mentioned earlier: they are designed to inform educational policy at a given time. However, what distinguishes these documents, with the exception of the National Education Policy, is that they outline specific plans in educational policy for particular periods of time. Initial analysis of these documents revealed that environmental education was hardly mentioned. However, I did not ignore these documents but used them to demonstrate the increasing emphasis that was given to environmental education in the educational system over a specific period of time. It is also, noteworthy that I found no document that set out a particular policy for non-formal education in general and for environmental education in Malaysia.

With regard to virtual outputs, the specific documents I used were the official websites of ROEE organisers. The websites I analysed were not only limited to the ROEE programmes in which the research participants participated; rather, they included those of other organisers as well. The data I gathered from the websites was important as it allowed me to corroborate that there had indeed been a surprising lack of information collected from the first and second category of documents concerning the practice of ROEE in Malaysia. More importantly, data obtained from the websites of the organisers of ROEE in which the research participants of this study participated allowed me to consider the relationship between the participants' experiences in ROEE, the objectives of the programmes, and other values that were attached to them. However, since some of the ROEE programmes experienced by participants in this research took place a long time ago, details of some of the programmes could not be retrieved.

In terms of authorship, not all the documents that were used named the author as a personal individual. Instead, the authorship of these documents was attributed to the organization. The selection of the documents based on this form of authorship was not intentional. However, according to Atkinson and Coffey (2006), the value of such documents is that the data they present can be viewed objectively, and is not based on a personal, subjective, constructive interpretation. Therefore, the advantage of these documents is that data is collected on what the real position of environmental education and ROEE in Malaysia is: data that deserves to be recognized. Importantly, data gathered through this method can then be interpreted subjectively, which reflects the constructivist approach which has been adopted for data collection and analysis. The ways the data were analysed reflect several techniques recommended for documentary analysis which I now describe.

i. Techniques for documentary analysis

There are various techniques that can be considered while carrying out document analysis. In this study, I chose techniques of analysis based on my original purposes for using this method (documentary analysis), and also having considered the types of documents I used.

The first technique I used was data organization through the process of selection and omission (Atkinson & Coffey, 2006; Silverman, 2014). This step was considered to be highly appropriate in this study, particularly when reviewing the official documents. The documents were very dense and included content that incorporated detailed descriptions of other policies. Except for the manual books for teachers, there were no specific and separate sections provided in each of them that presented general descriptions of environmental education or specific ROEE programmes. Instead, the descriptions were embedded within the explanations of the other policies. Therefore, I extracted fragments of data from particular parts which I considered relevant and worthy of deeper analysis in the second step of the process, and omitted data that I deemed irrelevant.

While organising data from documents, I paid careful attention to the language used as well as to their authorship. Each document usually constitutes distinctive levels of representation that are created using a particular convention (Atkinson & Coffey, 2006). Therefore, the representation of information in several documents, especially those that were produced for different or a wider target of readers, can be opaque and open to interpretation. In this study, I believed that this might have been the case for the documentary analysis of the series of Malaysian Plans. As mentioned earlier, there are specific chapters that address the national plan for the development of different fields. Consequently, the 'language' used in each of the chapters may be different, depending on their target readers, who are the policy makers for interdisciplinary education. To gain a broad picture of the status of environmental education, and the attention it was receiving from the policy makers in the country at certain times, I did not focus my analysis solely on the chapters relating to education and the environment but also on other chapters, especially those which were concerned with the economic and social context and situation. For example, when analysing the Malaysian Plans, I approached their content with particular caution and paid attention to how the data was placed and made visible, and how such systems of visibility were tied into the social practices that were described (Prior, 2008). However, I remained alert at all times to the fact that the interpretations I made were informed not only by my own experiences of being educated in Malaysia but also by my position as an academic researcher in education.

Thus, three categories of documents were identified, each containing several documents. Although each document may have been produced for different purposes, the data that

were obtained from these documents were analysed not only as individual documents but also as a cohesive whole. As Atkinson and Coffey (2006, p. 67) suggest, “the analysis of documentary reality must, therefore, look beyond a separate text, and ask how they [documents] are related. It is important to recognise that, like any system of signs and messages, documents make sense because they have relationships with other documents”. In fact, in the process of documentary analysis, other references that are in the form of concept papers and also reports of empirical studies were also used to supplement and corroborate the outcome of documentary analysis. This approach provides additional strength to this study as it offers another approach to triangulation (Krefting, 1991; Shenton, 2004).

A further technique that has been suggested for conducting documentary analysis that I applied in this study was thematic analysis through coding and categorising (Bryman, 2004; Silverman, 2014). I explain this technique in a later section on methods of data analysis. It is important to note here however that thematic analysis was also used for analysing data gathered from both the exploratory and the main interviews. Therefore, when describing how the thematic analysis was conducted for the interview data, I will also describe the similarities and differences between how this was handled for documentary analysis and for the interviews.

#### **3.4.5.3 Questionnaire survey**

Following the documentary analysis, a self-completion questionnaire survey was created. Blair, Czaja and Blair (2014) define a survey as an approach to data gathering in which information is collected from a sample of participants from a well-defined population. Specifically, the questionnaire survey is a descriptive research method for gathering information from the sample through a standardised set of questions in which each participants is asked the same sets of questions (McLafferty, 2003; Munn & Drever, 2004).

The purpose of conducting the questionnaire survey was to enable me to define further the focus of the study, to help me in recruiting participants for exploratory interviews, as well as to prepare prompt questions for the interviews. Therefore, the survey in this study focused on the demographic information about the research participants and the

background of the ROEE in which they participated. Considering that the tools used for this method was self-developed, this section provide the details of how questionnaire survey was designed, piloted, modified and administered in the actual study in order to enhance the trustworthiness of the study. For reference, all versions of the survey can be found in **Appendices C and D**.

i. Designing the questionnaire survey

When designing the survey questionnaire, I took into account three aspects for guiding me throughout the whole process: the purposes for conducting the survey; the research participants; and the medium I planned to use for administering the survey. Based on these aspects, a number of different formats for presenting questionnaire items could be devised. In order to allow researchers to gather a significant amount of relevant kinds of information, the range of questions may be extensive. But, according to Blair et al. (2014), the best types of questions should be able to elicit the information which the researchers hope to obtain from the survey, and avoid possible challenges and pitfalls in getting participants to respond to the survey.

Bearing the purposes of this method in mind, which were to recruit participants for exploratory interviews, and to prepare prompt questions for the interviews with specific participants, I first designed the survey to contain four sections. The first two sections gathered data about participants' demographic characteristics and information about ROEE courses in which they had participated, the third gathered participants' reflections on that programme, and the fourth asked for their consent to participate in an individual interview. The sections contain both closed-ended and open-ended questions. The use of closed-ended questions was informed by the need to be able to compare answers, to clarify the meaning of a question for participants, and to reduce the variability in the recording of answers (Bryman, 2004). In contrast, open-ended questions were especially useful as they allow for unusual responses and salient issues to be explored with participants (Bryman, 2004).

The first two sections, which gathered demographic information and information about the ROEE courses in which they had participated, were necessary to establish whether there

was a general pattern across the population with regard to several key variables (Arthur et al., 2012) (see **Appendix D** for the details of the variables). This information was very useful when I was preparing the protocol for the two interviews that were subsequently conducted. Based on the information, I prepared a list of potential prompt questions for the interviews. For example, by using these data, I was able to prompt the participants on how they constructed the outcomes of ROEE programmes they had experienced with regard to their personal backgrounds and particular learning activities that addressed environmental issues.

The third section invited participants' reflections on ROEE programmes that they had experienced. Some of the questions in this section were designed to be returned to for further elaboration in the interview. The purpose of this section was to invite responses that could be obtained from participants for a life history research approach that involved memory. Given that participants from this survey questionnaire would be interviewees in a later stage of the research, the questions in this section were designed to have the potential to assist them to recall the ROEE programmes in which they had participated in the past. In this way their memories would have already been triggered and would be surfaced before the actual interviews. Also, just like the questions of the previous sections, it was intended that responses from this section would supplement and add to those gathered from the interviews. In contrast to the previous sections, the questions were primarily open-ended. The questions aimed to gather the participants' views on, and reflections concerning, their ROEE experience, with a particular focus on their perceptions of the ability of the ROEE programmes to contribute to their learning about the environment and bring about environmental behaviour changes.

The fourth section invited participants to participate in an exploratory interview which was the next step of data gathering. Participants who gave consent to be interviewed were asked to provide personal information so that I could get in touch with them to arrange the interview. In addition, I also asked them to rank their preferences for the possible mode of interview, which was either face-to-face, by phone or using Skype.

Considering the online media I used for administering the survey, as well as the possible diversity of backgrounds of potential participants, I realised that a clear explanation about the study that was being conducted, and also the instructions for completing the survey,

was needed at the very beginning of the survey. This was particularly important given that there would be no direct contact between me, the researcher and the participants, and was also important to ensure that each potential participant could answer the survey, regardless of their age, their level of education, and their cultural characteristics (Bryman, 2004; Johnson & Christensen, 2008). According to Bryman (2004), the absence of a researcher when the survey is being completed should be viewed as an advantage of this method of data collection, because researcher effects are mostly eliminated. However, I was concerned that participants might have difficulty in comprehending the research and answering the questions. In such a case, I would be unable to immediately help or provide explanations to them. Therefore, the participants were provided with: basic information regarding the research I was conducting; the general aims of the research; the procedures for answering the survey questions; information about confidentiality and their rights when participating in the research; and contact information in case they had questions or queries regarding the study. This information was provided in the initial advertisement used to recruit participants and also at the beginning of the survey questionnaire.

In addition, because this was an online survey questionnaire and it was possible that a wide range of participants with very different backgrounds might respond, I decided that the survey questionnaire should be in a simplified form in terms of its language and question design. Johnson and Christensen (2008) advise that the language used in a questionnaire, whether in terms of the actual language or language level should be understandable to the people who are going to fill it out. This is because this will be influenced by the participants' reading levels, which will in turn affect their ability to understand and respond to the questions. When reading levels are too high, participants tend to skip questions, or do not take the questionnaire seriously, or they will refrain from participation if the reading level is too low (Johnson & Christensen, 2008). Therefore, I was very careful to ensure that the language used in this survey – not only in the questions, but also in the advertisement and the description of the study at the beginning of the questionnaire survey, was at a level that was not too high or too low for the potential participants.

For a study that is conducted in the context of Malaysia, I believed that I needed to pay special attention to the language matter. This was because the population in Malaysia is multiracial and most of the people are at least bilingual, with many of them being multilingual. In addition, I assumed that the proficiency level of each language would be

different for everyone, and that a participant might be more fluent in one language but less so in another language. With this in mind, I developed the survey using the two main spoken languages in Malaysia, namely Malay and English. The translation was done by using back translation technique. More detailed explanations on this technique are presented in a subsection of **Section 3.4.5.4**.

ii. Piloting the questionnaire survey

Because the questionnaire for the online survey was original and self-developed, it was decided that it was necessary to pilot it.. According to Munn and Drever (2004, p.33):

By the time you and your colleague have lived with the questionnaire for some weeks you have come to know exactly what you mean by every question. It is very difficult for someone so closely involved to imagine how respondents might interpret it differently, when they encounter it for the first time. It is only when the returns come in that you may realise that some respondents have misunderstood what was meant.

Therefore, the survey was piloted twice before the actual study was administered. The two cycles of pilot study were distinct in terms of their target participants. The first cycle was conducted among the postgraduate students of Moray House School of Education, The University of Edinburgh. The second cycle involved the Malaysian community in Edinburgh. The decision to target different groups of participants for the pilot studies was made in an attempt to validate the questionnaire from different perspectives. The first group of participants was selected to obtain feedback from the perspective of academic colleagues and other academics. As suggested by Munn and Drever (2004), in order to get maximum useful feedback as readily as possible, I believed that the first pilot study should be conducted among the people who were likely to be sympathetic to my work but also be willing to give forthright comments and sharp criticism. The second group of participants consisted of people who had similar characteristics to the participants in the actual study.

### ***First pilot study***

The questionnaire survey was circulated through the postgraduate mailing list of the School of Education. In order to obtain incisive and perceptive feedback from the postgraduate students I added another section at the end of the survey which contained two questions that used a think-aloud technique. This technique requires participants to express their thoughts and perceptions about the questionnaire survey (Johnson & Christensen, 2009). The first question asked them to give comments or suggestions on how I should improve the questionnaire while the second question asked how long they took to complete the questionnaire. Both of the questions were in the form of open-ended questions.

This pilot study began on the 6th of May 2014 (Tuesday) and ended 12 days later. Although a total of 22 participants accessed and began the survey, only 6 completed it. This represents 11.58% of the who could have responded.

Analysis of the pilot study surveys revealed a difference in the total number of responses to each of the sections in the questionnaire. The number of responses declined each time the participants moved to the next section. This was found to be due to technical problems. The 'Next' button that should have allowed participants to move to the next page of the questionnaire was faulty. Apart from this technical issue, the open-ended questions which invited reflections on the ROEE programmes were perceived by participants to be impractical and difficult to answer.

In response to these outcomes, I took measures to revise and address the weaknesses of the survey. The technical problem was easily fixed by changing the online survey into a one page questionnaire. Another significant change I made was to omit the section which invited participants' reflections on the ROEE programmes that they had experienced. This was done to reduce the time required for completing the questionnaire and to avoid the unpleasant feeling that was reported by the participants of the pilot study. The aim of this section had been to gather their views on what they felt about the programmes and the impact they had had on their subsequent lives and careers. However, without this section, I believed that this aim could still be achieved through participants' involvement throughout the process of completing the entire survey.

### ***Second pilot study***

The population of participants for the second pilot study was the Malaysian community in Edinburgh. The population was accessed through an official Facebook group pages for this population named '*Komuniti Malaysia Edinburgh - Family*' (Edinburgh Malaysian Family Community). For this cycle, the study was conducted for seven days only from 1st until 7th of June 2014. Although the duration was shorter than the first cycle, I thought it was sufficient because the questionnaire had been revised following the first pilot.

In contrast to the first pilot, I conducted the second pilot study as if it were an actual survey. Apart from the modifications made as explained in the previous paragraphs, the sections for comments and suggestions were removed. As would be the case in the actual study, participants were invited to send comments, suggestions, and questions to the contact details that I provided in the introduction to the study in the advertisement, email and questionnaire survey.

Over the week, nine out of 289 people completed the questionnaire, which represents 3.11% of the target population. Although participation in this pilot was far lower than in the first pilot, the percentage of participants who completed the survey was higher. No comments or suggestions were received from participants in this cycle of pilot study about how the survey could be improved and none reported problems they had encountered while completing it. It was therefore decided that the questionnaire would be used without changes for the main study.

#### iii. Administering the actual survey

The main study was conducted over three months from 12th of June 2014 until 12th of September 2014. For this study, the online survey was circulated using the sampling method that I explained earlier in **Section 3.4.5.1**. By adopting these methods, I obtained 39 participants. As was the case with the second pilot study, these participants completed the entire questionnaire. Because nine participants in the second pilot study had completed the entire questionnaire and had provided full and detailed responses, I decided that these nine would be added to the 39 who responded to the main survey and therefore there

would be a total of 48 questionnaires comprising the full data set of questionnaires. From this, 24 participants agreed to participate in an interview, five from the second cycle of pilot study and 19 from the main survey. However, for a number of reasons, this number was reduced when I conducted the interviews. In the following section an account is given of the interview study and of the reasons that it proved to be impossible to interview all 24 participants.

#### **3.4.5.4 Exploratory interviews**

Two phases of interviews were conducted during the qualitative data-gathering phase of the study – an exploratory interview and then the main interview. Each of these phases of interviews was designed to achieve different purposes and, although there were distinct similarities in terms of the approach adopted, there were also key differences. In the current section, details of the first interview are provided.

In general, an interview can be defined as a conversation or verbal exchange between two parties (Burns, 2000; Gray, 2013). This definition is similar to the semantic definition provided by Kvale (2008) and Kvale and Brinkmann (2009), where they define an interview as an ‘inter-view’. By inter-view, they mean “an interchange of views between two persons conversing about a theme of common interest” (Kvale, 2008, p. 5). However, it is important to bear in mind that forms of conversation are multiple. They can, for example, be either a conversation in everyday life, or in literature, or in a particular professional context within which the research interview takes place. The differences that distinguish each form of conversation can be seen to be based on the purposes of the interviews. Interviews in research are commonly used as tools for obtaining information that is necessary for constructing knowledge (Kvale, 2008). Similar to the questionnaire survey, an interview also has the ability to gather more objective information. However, according to Cohen, Manion and Morrison (2007), the knowledge constructed from interviews is usually based on the interpretation by interviewers and/or interviewees of the world in which they live, and expresses how they regard situations from their own perspectives and points of view (Cohen et al., 2007). Burns (2000) and Gray (2013) suggest that this knowledge is constructed and described from the perspective of people’s beliefs, feelings, opinions, attitudes and the particular meanings that underpin their lives and behaviours. Therefore,

an interview can also be viewed as a tool for evaluating or assessing a person in some respects (Cohen, et al., 2007).

The purpose of this first interview, the exploratory interview, was to explore whether, how, and the extent to which, the participants' experiences in ROEE affected and influenced the development of their pro-environmental actions. In line with grounded theory, which was one of the main approaches adopted for the study, this was the last measure that I took before the final focus of the study was decided upon. The exploratory interview provided me with opportunities to obtain information which could then be further elaborated on through the use of additional probing questions which might help further to clarify and illuminate initial responses (Charmaz, 2014; Gray, 2013; Savin-Baden & Major, 2013).

Informed by my desire to conduct an effective and informative exploratory interview which would shape the main interview, I gave serious consideration at the planning stages to both process and content, and sought to make decisions which would allow me to gather as rich a set of data as was possible. In the paragraphs which follow, an account is provided of the methodological considerations and decisions made when designing the exploratory interview, administering it, and analysing the data that were gathered.

i. Designing the exploratory interview

To conduct an interview for life history research, I adopted a narrative interview approach as suggested by Roulston (2010). One essential ingredient in a narrative interview is that decisions made by the interviewer concerning the sequence of questions is of key importance, as not only does this highlight for the interviewee the key areas which the interviewer perceived to be important, but it also points to the possibility of later action (Kvale, 2008; Riessman, 2008). Taking this approach ahead, the questions were mostly ordered in a temporal sequential order with regard to the narrative being created. This allowed the participants to consider the questions and their possible responses in the chronological order in which they experienced the events being narrated (Mishler, 1986). A consequence of this approach was that, to some extent, the plot and the structure of the narrative being created were shaped by the participants and, as a result I had less overall control (Kvale, 2008; Riessman, 2008). However, to ensure that the data obtained met the

aims of the study, and provided answers to the research questions, I took Kvale's (2008) suggestions into consideration by beginning the interview with a general open-ended question, asking questions that open up topics and possible directions of enquiry, and allowing participants to some extent to take the lead by constructing meaningful answers.

Holstein and Gubrium (2004) caution that there should be a limit to the extent to which the interviewer relinquishes their authority when carrying out an interview, and suggest that participants should not be treated as repositories of knowledge or opinions, but rather as a co-creator of the knowledge, whereby the collaborative efforts involve both interviewer and interviewee in meaning- or knowledge-making. Such a close collaboration they call an active interview. To achieve a successful active interview, I followed two key rules that Holstein and Gubrium (2004) outline: the first rule relates to the need for me to remain alert at all times to the purposes of the interview and to the questions that need to be asked to fulfil those purposes; the second rule relates to the need for me to be aware of the narrative procedures for knowledge production that are continuously developed within the interview interaction. When planning and conducting the interviews in this research study, attention was therefore paid throughout to ensuring that the questions allowed the participants to create a meaningful narrative within an active oral transaction where both I, the interviewer, and the interviewee were engaged in the construction of meaning.

When designing the exploratory interview I also thought carefully about which type of interview would best suit my purposes for conducting this exploratory stage of the research. Interviews range from structured, semi-structured to completely unstructured, and the main difference that distinguishes each of these types of interview is the degree of standardisation of the questions (Gray, 2013; Roulston, 2010; Savin-Baden & Major, 2013). Because at this stage I was still deciding on what would be the key focus of the main interview schedule, I decided that the most appropriate format would be the semi-structured interview which allowed me both to ask a very similar set of questions to each participant, but also to ask additional questions which emerged as appropriate and salient in light of individual responses (Kvale & Brinkmann, 2009; Savin-Baden & Major, 2013). Although using an unstructured interview approach may have been more appropriate as it would have allowed the participants to take the lead in constructing a life history narrative, the decision to use semi-structured interviews was informed by my belief that such an approach would allow me to explore the topic in some detail without deviating in any

significant way from the main focus of the research study. Semi-structured interviews were appropriate in that they allowed me to incorporate the substantive 'what' and 'why' questions which encourage an active interview (Holstein & Gubrium, 2004). Also, because this approach sits in the middle of the continuum, with completely structured interviews at one end and completely unstructured at the other, I believed that gathering data in this way would allow me to make comparisons and contrasts, within and across interviews, while at the same time remain alert to unexpected responses which merited scripted additional questioning and probing (Kvale & Brinkmann, 2009; Savin-Baden & Major, 2013). As Holstein and Gubrium (2004, p. 145) remind us, "one cannot expect answers on one occasion to replicate those on another because they emerge from different circumstances of production".

Therefore, some guidelines for the interview schedule were required to ensure, to some degree at least, that similar ground could be covered in each interview wherever possible. For these reasons, I developed an interview protocol that consisted of a number of pre-determined key themes and questions for each theme (see **Appendix E**). These themes were explored to allow me to gather the participants' perceptions of their ROEE experiences, regardless of whether or not these perceptions were associated with learning about the environment or the subsequent development of pro-environmental behaviours. The themes which emerged from the review of the literature on ESD, continuity of experience and environmental behaviour change, which were reviewed in **Chapter 2**, were also carefully considered when constructing the topic set of questions for the exploratory interview. Preparing the topic area and questions in advance ensured that I covered similar ground with each participant, and also allowed me to use a range of different question types, such as descriptive questions and narrative questions to enrich the quality of the responses. Descriptive questions aimed to elicit general information while narrative questions can elicit stories (Savin-Baden & Major, 2013). In addition, two forms of questions that Savin-Baden and Major (2013) suggest for gathering in-depth data – contrast and evaluative questions – were also included. Such questions encourage participants to think about an extreme case and to enable participants to make judgments (Savin-Baden & Major, 2013). With themes and pre-determined questions, I also was able to some extent to that I was fully conversant with the schedule, and for dealing with the possibility that I

might be stressful, become flustered and miss questions out or ask the wrong questions (Cohen et al., 2007).

The interview protocol also contained a script for guiding me to introduce the research study and end the interview session. The introduction was similar to the introduction that was provided in the questionnaire survey; the main difference was that this introduction was designed to be shared orally with the participants at the beginning of the interview. In addition, I also took the opportunity at this point to begin to build a rapport with the participants. In conducting research interviews, rapport between an interviewer and the participants is important to ensure the participants are comfortable and confident that the interview will be conducted on the basis of understanding, respect and trust (Gray, 2013). However, the importance of building rapport with the participants was a key consideration at earlier stages of the study, especially when I contacted them to arrange the interviews, and it was also to the front of my mind when I was asking questions and listening carefully to their responses. A more detailed explanation on the measures that I took is provided later in the following sub-section which describes the administration of the exploratory interviews. In the script for the closing, I not only provided a statement of appreciation to participants for contributing valuable research data but, most importantly, there was also a reminder to myself to seek and obtain consent from them to be contacted again, in case I needed additional information or clarification, and to invite them to participate in a second interview, which was the main data-gathering approach.

## ii. Administering the exploratory interviews

As noted above, the participants for the exploratory interview were drawn from those who had completed the survey questionnaire. An invitation email was sent to the 24 participants who had given consent to be interviewed. No standard email was created for this purpose. Instead, I used an informal approach to invite them to arrange a time to participate in the interview. This approach was used in light of Gray's (2013) recommendation that researchers should make efforts to build rapport with their participants in the early stages of data collection. Importantly, because some were acquaintances while others were contacted through intermediaries, and the participation in this study of the latter group was obtained through convenience sampling, I decided that sending a formal email was

inappropriate because it might have affected the rapport that had been created. However, despite using an informal and unstandardized email, I ensured that the essential information – i.e. inquiries about preferred interview mode, date, time, venue, and alternative ways of communication – were conveyed to allow me to arrange with the interviewees an appropriate time and place to conduct the interviews. In addition, in the email, I also invited them to submit questions if they required additional information about the study.

As a result exploratory interviews were conducted with 11 participants within the three month period of data collection. The remaining 13 participants withdrew for a number of reasons which included: the participants' anxiety about participating; difficulties with arranging when and where to meet; and, despite reminders, a lack of response to the invitation email. With regard to participants' anxiety, a number of participants refused to be interviewed as they were concerned about their inability to contribute data to the study. Two of them explained that they were concerned about their ability to recall details of their ROEE experiences. In response, I attempted to reassure them that the information they would give would nevertheless be valuable for the study. However, they were adamant.

While planning the interview schedule, I attempted to reach a consensus with all participants that the interviews would be conducted either face-to-face or through Skype (a video call application). This plan was informed by recommendations in the research literature that suggest face-to-face interviews are the most appropriate. However, the use of video calls using Skype has been accepted as an appropriate and useful alternative to face-to-face interviews. According to Deakin and Wakefield (2013), Hanna (2012) and Sullivan (2013), a Skype interview has similar potential to a face-to-face interview as both take place in real-time, and the interviewer and the interviewee are visible to each other which allows both to be aware of, and take account of, the other's body language etc. What could distinguish them, however, is that the Skype interview may be less effective in building rapport (Deakin & Wakefield, 2013, Hanna, 2012). However, I decided that this would not be an issue for me. In the event, from the 11 participants who were interviewed, none were interviewed using Skype. Nine of the participants were interviewed face-to-face, while another one was interviewed by telephone and one using Facebook dialogue (instant message).

The use of telephone and internet-based interviews (e.g. Facebook dialogue and email), as interview approaches, has been criticised for the inability of participants to observe non-verbal cues, and for the resulting decline in rapport (Gray, 2013; Oppenheim, 2000; Robson, 2011). Oppenheim (2000) and Robson (2011), however, acknowledge the advantage of the interviewer's invisibility in telephone and internet-based interviews for overcoming interviewer effects. With regard to the final two participants, conducting a face-to-face interview or using Skype was impossible because of practical circumstances: their locations were remote and neither used the video call application. Because I therefore did not have direct access to the participants, I decided that these modes of interview were appropriate (Savin-Baden & Major, 2013). Therefore, the interviews with these two participants were conducted using the telephone and social media to avoid a loss in terms of sample size.

The first two face-to-face interviews were originally intended to be treated as a small pilot study. I decided to conduct a pilot study to allow me to detect any ambiguities in the wording of the questions, and to allow me to revise the interview protocol should such ambiguities arise. As was the case with the questionnaire survey, because there were no problems identified during the two interviews, data gathered from the pilot study were analysed together with the other data from exploratory interviews.

While exploring the participants' experiences of ROEE programmes, using a narrative interview approach which allowed the participants to tell their stories in their own ways, most of the participants encountered difficulties in retrieving memories of the programmes they had experienced and in reflecting on the influences that they had had on them throughout their lives. Although I had themes and prompt questions prepared, the participants often paused as they attempted to retrieve their memories. In this situation, the list of themes and suggested questions that I had prepared in the interview protocol were very useful. In addition, I also devised probes which is commonly suggested as one of the ways to delve deeper into information given by the participants in interviews (Bryman, 2004; Robson, 2011). Probing questions are different to prompting questions: probes are more spontaneous during the interview, and are designed to invite the participant to explore an answer in more depth; prompts, on the other hand, are follow-up questions which have been prepared in advance to help someone think about possible answers to a question (Robson, 2011). In the interviews, probes required me to listen to the participants' answers attentively and try to understand what they were saying, to negotiate meaning

with the participants when their answers were unclear and to immediately construct appropriate follow-up questions to allow me better to understand their answers. Therefore, as Kvale (2008) advises, I paid close attention to what was said and how it was said. However, one important consequence of using probes was that I found it was very challenging to keep the chronological sequence of participants' narration in order. Often, the prompt and probe questions caused the participants to return to previous settings as I prompted and probed their answers with another question.

The face-to-face interviews and telephone interview were audio recorded using the Voice Memos application on an iPhone. With the telephone interview, this method of audio recording was possible as I made the call using a different telephone, and activated the loud speaker. These recordings were important as they allowed me to transcribe and then analyse the data. However, the introductions, in which I outlined the research study to the participants and built rapport with them, were not recorded. Instead, I recorded only the parts in which the participants reflected on their ROEE experiences. Based on these records, the minimum and maximum duration of the interviews (face-to-face and telephone interviews) were rather different. The shortest interview lasted only for 20 minutes, while the longest interview was 69 minutes. The average duration of the interviews was 38 minutes. I felt that there were several reasons that the average time for the interviews was relatively short: some took place in the participants' offices during working hours; and the nature of the research meant that they were being asked to use their memories to recall and then reflect on programmes which some had done quite some time before which inhibited some participants' ability to elaborate in detail on their experience. In sharp contrast however, the interview using a Facebook dialogue took approximately two hours.

### iii. Data Analysis

As is the case in any research study, the data need to be analysed in order to enable the researcher to understand them and to offer a possible explanation and interpretation. According to Bernard (2000), possible meanings that can begin to explain the data may be constructed based on patterns which emerge from the data set. With regard to this, Robson (2011) suggests that there are different possible approaches to conducting

qualitative analysis: the quasi-statistical approach; thematic coding; or grounded theory. To summarise, a quasi-statistical approach is a method that involves the conversion of qualitative data into a quantitative form, such as content analysis (Kvale, 2008; Robson, 2011). Thematic coding generally aims to identify, analyse and report patterns within a set of data by bringing them together, developing codes and categories, to allow the researcher to suggest possible meanings and offer interpretations of the themes and patterns that have emerged (Aronson, 1995; Braun & Clarke, 2006). A grounded theory approach, on the other hand, which was the approach that I adopted for analysing the exploratory interviews, also involves engaging the researcher in the process of thematic coding as one of its key features. However, thematic coding in a grounded theory methodological approach is theoretically different in that it involves abductive analysis discursively, in order to promote an openness on the part of the analyst to all possible theoretical understandings (Charmaz, 2012; 2014). In the paragraphs which follow, a detailed account of the steps I took when analysing the interview data is provided. The steps of the data analysis can be divided into three steps: transcription, translation, and coding and categorising.

### ***Transcription***

Transcription is a process in which spoken data are reproduced in the form of written text (Halcomb & Davidson, 2006). It may be feasible to analyse data in its original form – i.e. an audio recording (Robson, 2011) – however, as is a more common practice, the interview data in this research were first transcribed into written form before it was further analysed. Several methods have been suggested for transcribing interview data. Specifically, the method for transcription used was verbatim where verbal data was reproduced word-for-word (Legard, Keegan & Ward, 2003; Ritchie & Lewis, 2003; Silverman, 2011).

According to Cohen et al. (2007), verbatim transcripts that capture all the information within the social settings of the interview may be unnecessary. In addition, thematic analysis, which is part of a grounded theory approach, typically does not require as detailed a transcription as is more commonly required in conversation or discourse analysis. However, despite these views, I decided to use the verbatim approach. I considered this

necessary because within the present study I was also using a life history approach (Mishler, 1986), which required me to minimise the possibility of misinterpretation of the data, and also would allow for a more in-depth analysis (Bernard, 2000; McLellan, MacQueen, & Neidig, 2003).

Lengthier units of text (of transcription) are necessary in order to examine how social phenomena are framed, articulated and experienced as well as to highlight the relationships within and between particular elements of such phenomena (McLellan, et al., 2003). Therefore, I also included prosodic features – e.g. rising and falling of the voice – in addition to the orally reported data. Cohen et al. (2007), Finlay and Ballinger (2006), Kvale and Brinkmann (2009) and Mishler (1986) suggest that this element of prosody may be important at a later phase of analysis as it could enhance our understanding of the significance of what has been said. In this study, the prosodic text allowed me to make a more detailed analysis when describing the participants' feelings such as excitement, uncertainty and disappointment. In addition, this whole process helped me to familiarise myself with the data set and to identify the themes, patterns, consistencies and inconsistencies.

### ***Translation***

Translation was required in this study because the language used during the data collection was different from the language in which this research report has been presented. Only one participant was interviewed fully in English. Ten others preferred to be interviewed in Malay although, in the event, their responses combined both Malay and English, which is very common in conversation amongst Malaysians who are mostly bilingual. However, the degree of combination was different for each of the participants.

However, it was not necessary to provide a full translation for the transcription in the first instance. According to Roulston (2010), a researcher may also transcribe the interview data extracts when presenting findings, and they could either present only the translated data, or both the original and translated data. However, the key requirement is to ensure that the translation achieves accuracy, regardless of the stage at which translation is conducted.

In this study, at the stage of transcription, the data from the exploratory interviews were kept in the original language used by the participants during the interviews. The purpose of keeping the original language was to avoid misinterpretation of the data reported by the participants when I was analysing the data. Translation of the data was undertaken when the findings were reported, after the full data set had been analysed, together with the data from interviews in the main study, and the method of translation used was back translation. According to Bernard (2000), convergence of transcript translation in the back translation method requires at least two bilingual speakers. The first translator translates the transcripts from the language in which the researcher is working into the language in which the research will be reported. Next, the translation is re-translated by another translator into the language of the original transcripts. The translations are considered credible if the second translation is almost identical to the [original] transcript (Bernard, 2000). In this study, I adopted the role of the first translator, while the second translator was a Malaysian PhD student majoring in Teaching English to Speakers of Other Languages (TESOL).

### ***Coding and categorising***

Coding and categorising in conventional thematic analysis have been described as processes of data reduction. In the practice of coding, the researcher identifies how certain extracts from data can be labelled with a code which will then permit subsequent identification of the extract when looking for patterns across the data set (Kvale, 2008; Roulston, 2010). Following the coding process, the resulting codes are then organised into fixed themes according to the particular concepts being investigated (Kvale, 2008; Roulston, 2010). However, the fact that this study employed both constructivist grounded theory and life history approach meant that there were some additional steps that I considered when making decisions on the best approach to coding which reflected the strength of the findings from the exploratory interviews.

In this study, to code the data obtained from the exploratory interviews, I combined the strategies proposed in both the literature on grounded theory and narrative analysis. As grounded theory proposes, the aim of coding at this stage was to excavate a theory from

the raw data, which is commonly referred to as theoretical sampling (Charmaz, 2012; 2014; Walker & Myrick, 2006). According to Charmaz (2012), in theoretical sampling, data is gathered to saturate the properties of a tentative category. Indeed, as described earlier in **Section 3.4.2**, the role of researcher is central to a constructivist grounded theory approach where the intention is to achieve theoretical sampling.

Therefore, in contrast to the coding process in conventional thematic analysis and Glaserian and Straussian grounded theory, the coding process in constructivist grounded theory begins with an open-coding approach in which close involvement by myself is required to analyse the data line-by-line, rather than simply to sift, sort and summarise them (Charmaz, 2012; Kvale, 2008). It is an attempt to encourage me to immerse myself in the data so that tacit elements are sought, as Mills, Bonner and Francis (2006) and Suddaby (2006) suggest. In the course of this process, as Charmaz (2012) and Moghaddam (2006) suggested, data were broken down into components to provide explanations and interpretations.

The process of providing explanations and interpretations involves not only inductive and deductive reasoning but also abductive reasoning in which the role of the researcher in the analysis process, and the interaction between the researcher and the participants in the process of interpretation of participants' meanings, are significant (Charmaz, 2012; 2014). In terms of the order, the traditional conceptualisations of grounded theory suggest that data coding should begin with inductive coding as a *tabula rasa* (Corbin & Strauss, 1990; Glaser & Holton, 2004). Nevertheless, as I have noted in **Section 3.4.2**, Dey (2007) argues that constructivist grounded theory rejects the suggestion that research data can be analysed with 'empty head'. I therefore engaged in careful and systematic inductive, deductive and abductive analysis concurrently in an iterative cycle (Charmaz, 2012).

Charmaz (2012) suggests that deductive coding can be conducted by employing a set of analytical questions, in which the researcher may scrutinise the area of interest identified using a deductive approach. This is an attempt to produce an interrogative account of findings, which moves beyond a descriptive analysis, but at the same time remain within the bounds of the issues and topics of interest of the study (Charmaz, 2012). In this study – particularly for the exploratory interviews – the three themes which emerged from the critical review of literature presented in the previous chapter (i.e. ESD, continuity of experience and environmental behaviour change), and also the additional themes that I

included in the interview protocol, were used to assist me in taking ahead the deductive analysis.

With regard to inductive coding, a narrative analysis approach which characterises life history research was useful. However, with narrative analysis, Feldman et al. (2004) remind us that it can be challenging when the stories told by participants are loaded with embedded, and sometimes hidden, information. Therefore, Floersch et al., (2010) add a note of caution here and alert researchers to the need to avoid an oversimplified understanding of data. This view echoes the advice that the process of analysing narration should pay close attention to the temporality and sequencing in the story (Feldman et al., 2004; Floersch et al., 2010; Smith, 2000). Therefore, throughout the analytical process I remained alert to temporality, sequencing and linguistic elements which, according to Riesmann (2008) and Smith (2000) are of key importance for narrative analysis. As suggested by Riesmann (2008) and Smith (2000), and Charmaz (2012) in grounded theory literature, I paid close attention to the linguistic elements, line-by-line, when coding the exploratory interview data. Aspects of language that were examined included the properties of narrative such as units of meaning, the macrostructure, cohesion between sentences, and narrative perspective (Smith, 2000). This approach allowed me to interrogate the data carefully and thoroughly, and to remain alert to themes which were included in the interview protocol and also to those which were discussed in **Chapter 2**. This approach involved me in careful and considered inductive coding. In addition, when engaging in narrative analysis, it was also helpful that I identified the oppositions in the story. According to Feldman et al. (2004), such information may derive from data both explicitly and implicitly, providing insights into not only what the participants imply their story is, but also what they imply their story is not. The identification of this information promoted the accuracy of interpretations made from the analysis.

I also identified attribute codes, which provided demographic information about the participants. The descriptive demographic information is presented in **Table 3.2**. The purpose of this coding was to provide essential contextual information about the participants to allow me to examine their views on their ROEE experiences during the interpretation stages of the analysis (Saldaña, 2009).

Memo-writing was a useful tool that I used to abductively integrate all the approaches discussed above while coding and categorising the interview data. This decision was informed by Charmaz's (2012; 2014) suggestion that memo-writing is an approach within grounded theory that allows researchers to explore tacit and explicit meanings within data. The significance of this approach became more apparent as the process of analysis progressed, particularly because I did not use any software packages during the process of analysis in this study. Although the use of recent software such as Nvivo and ATLAS.ti is prevalent among qualitative researchers, I opted to explore the data manually. Similarly to Gibbs's experience (2008), coding and categorising manually using memo-writing allowed me to be creative and flexible and gave me ease of access while organising and structuring my ideas of the observed data. Therefore, a small column was created on the right side of each of transcripts for placing the memos. Following this process, as suggested by Gibbs (2008), I created matrices to organise the memos to develop codes, and to group the codes into categories. A number of formats for matrices were used iteratively throughout the coding and categorising process (a sample matrix can be found in **Appendix F**). Through this use of matrices, I was able to manage the data, make comparisons, explore them analytically and in greater depth, and clarify what was emerging from the data more systematically.

Additional reflexive practices were carried out through consultation with academic supervisors and discussion with colleagues to maximise the opportunities to produce defensible analyses and interpretations. According to Shenton (2004), scrutinising a study through collaboration with other academics is beneficial for achieving credibility because it provides fresh perspectives that challenge the main researcher's assumptions. Shenton (2004) believes that the main researcher's ability to view his or her study with real detachment may be inhibited since he/she is very close to the project. These processes of analysis were continued until there were no additional insights emerging from the data.

**Table 3.2** Distribution of sample

<b>Participant</b>	<b>Gender</b>	<b>Time interval</b>	<b>Profession</b>	<b>Current involvement in environmental conservation</b>	<b>Age during participation in ROEE</b>	<b>Academic Qualification</b>	<b>Others</b>
<b>Alia</b>	Female	24 years	PhD student (Social Policy)	n/a	14 years old	Bachelor and Master degree in Information and Technology PhD Social Policy	Currently lives in Edinburgh
<b>Azhari</b>	Male	25 years	EE consultant	Organising OEE	12 years old	Bachelor degree in Computer Science	
<b>Borhan</b>	Male	14 years	Social researcher at a centre for environment and development	Advisor of an environmental volunteering group	17 years old	Bachelor Degree in Geology	
<b>Faizah</b>	Female	10 years	Teacher	n/a	16 years old	Bachelor degree in Education	Experienced two ROEE programmes
<b>Felix</b>	Male	18 years	Teacher (Biology)	n/a	9 years old	Bachelor Degree in Science Education	
<b>Halina</b>	Female	16 years	Housewife	n/a	12 years old	Bachelor Degree in Psychology Master Degree in Psychology in Education PhD in Psychology	Currently lives in Switzerland
<b>Izzah</b>	Female	7 years	Undergraduate student (Law)	Member of an environmental volunteering group	15 years old	Bachelor Degree in Law	
<b>Kefli</b>	Male	3 months	Secondary school student	President of school nature club	16 years old	Secondary School	
<b>Khairul</b>	Male	31 years	Unemployed	Facilitating environmental programmes	15-17 years old	n/a	
<b>Raju</b>	Male		Unemployed	Member of an environmental volunteering group	16 years old	Bachelor Degree in Engineering	
<b>Sarah</b>	Female	17 years	EE programme officer	Organiser of EE and OEE	11 years old	Bachelor Degree in Park and Amenity Management	

### 3.4.5.5 Main study interviews

The design and focus of the second set of interviews which comprised the main study were centrally informed and influenced by the analysis of the exploratory interviews and by the additional literature that was reviewed following this analysis. In the sections which follow, a detailed account is provided of the ways in which the findings from the exploratory phase of data gathering and analysis, and the subsequent literature reviewed, shaped the interview protocol for these interviews. It is not my intention to describe the approach to interviewing that was adopted in this phase of the study with regard to interviewing since my roles and behaviours as an interviewer involved in the joint, interactive construction of a narrative remained the same as that described in the sections concerning the exploratory interviews, and I at all times remained alert to my responsibilities as an interviewer which have already been discussed (see **Section 3.4.5.3**). However, the main difference between the exploratory interviews and the main interviews was the content and focus of the interviews. Although a few of the topics from the first interview were revisited at the beginning of the second interview, the main thrust of this interview was to explore with the participants what they perceived to be changes in their behaviours and attitudes since their first interview. This therefore allowed me to remain true to a life history approach which investigates changes over time.

The exploratory interviews focused on how the participants perceived the significance of their ROEE experiences, and the extent to which, if at all, these experiences developed the participants' knowledge of the issues, shaped their attitudes concerning pro-environmental issues, and, importantly, resulted in specific actions. Analysis of the interviews revealed that for each of the participants cognitive and affective learning had occurred, though to differing degrees. However, such learning did not always result in subsequent pro-environmental actions for several of the participants. In the case where pro-environmental actions were reported as the outcome of ROEE, my thematic analysis suggested that the actions could usefully be organised within three key themes, each of which is captured in the following pairings:

- i. immediate and gradual actions;
- ii. actions within private and public sphere;
- iii. direct and indirect actions.

Definitions and detailed explanations of each of these pairings are presented in the following sections.

Based on these findings, I realised that the participants may have been at a different stage in the construction of action or behaviour when they had attended the ROEE. In addition, the data suggested that their stage of change may have advanced or regressed over time as a result of the influence of subsequent experiences. This is not a new idea. As discussed in **Section 2.5**, behavioural change can occur through what Dewey terms the formation of a continuity of experience (Dewey, 1938). From this perspective, the development of an action does not necessarily happen in an instant, but can occur across the course of a life. Informed by this critical abductive analysis, which involves considerations of all possible theoretical explanations for the data, inductively and deductively through the constant comparative methods (Charmaz, 2006), I decided to conduct the main study with reference to the framework of life history.

To conform to this approach, I adapted the Transtheoretical Model as the theoretical framework of this research. This model was selected over other models based on its unique criteria that emphasise the idea of behavioural change over time (Prochaska & Velicer, 1997), while other theories of behavioural change ignore this aspect (Lenio, 2006). In addition, in comparison to other environmental behaviour theories, these criteria allowed me to study changes in environmental behaviour more extensively since they address changes in stages and processes. Accordingly, the research questions in **Section 3.2** were formulated to capture the dimensions of interest that emerged from the data gathered from exploratory interviews.

To be able to answer these research questions, a richer set of data were required beyond those gathered in the first and second phases of data collection. Detailed information about the participants' involvement in other environmental activities across their lives was required in order to determine whether their involvement in such activities had influenced, or was influenced by, their ROEE experiences that were discussed in the exploratory interviews. For some participants, this information was available, albeit at a superficial level, from the exploratory interviews which focused on their ROEE experiences. Therefore, these existing data could arguably be used to answer the research questions. However, this

would provide only a partial picture, in my view, since the information obtained from the earlier interviews was inevitably limited to the participants' conscious learning and thinking (Semetsky, 2009). Adopting a life history approach allowed me to discover any environmental behaviour change that had occurred through their experiences arising from the deep interplay between mind and surroundings in multiple and varying parameters of unconsciousness (Semetsky & Delpech-Ramey, 2012).

i. Designing the main study interview

In line with a life history approach which gathers data from a lifespan perspective, I decided that the data gathering phases should cover:

1. Participants' life experiences before attending ROEE course
2. Participants' life experiences after attending ROEE until their participation in the exploratory interviews
3. Participants' life experiences between the exploratory interview and the main study interview

A justification for including the first and the second lifespan phases has been provided above but was, in summary, to observe the ways in which participation in ROEE influenced or was influenced by other experiences in the epistemological process of developing pro-environmental actions. With regard to the third lifespan phase, this was added to take account of the fact that the exploratory interviews themselves could have prompted the development of subsequent pro-environmental actions. The advantage of including the third phase was not only to conform with the life history approach, but also to determine whether, and to what extent, memory could be a barrier or opportunity for the participants in their efforts to translate what they had learned in ROEE into action over time. The exploratory interview may have triggered their memory, encouraged them to reflect again on the learning experience, and eventually take action. In addition, with regard to TTM that framed this research, I decided that the data gathered should contain information regarding the participants' doing, thinking, and also feeling (emotion). Because of this and in keeping with life history approaches, I decided to conduct the main study interviews with the same sample as those who were involved in the exploratory interviews.

A semi-structured interview approach was adopted. However, the interview schedules were more structured when compared to those of the exploratory interviews. A number of key questions were devised, as well as a list of prompting and probing questions for each of them. The prompt questions were prepared in case participants experienced difficulties in recalling events across the course of their lives. They also helped me to gather necessary information for describing factors that influenced environmental behaviour change. However, I realised that the prompt questions might inadvertently cause me to increase the scope of the study, which I intended to avoid, given that the main thrust of the second interview was to achieve depth which would allow me to provide fuller and more developed answers to the research questions. Consequently, I took care to ensure that I took control of the direction of the participants' narratives.

In addition, in contrast to the exploratory interviews where the interview schedule was the same for each participant, individual interview schedules were prepared for each of the participants which allowed me to refer to each participant's specific responses in the earlier interview. I carefully identified particular comments from the previous interviews for further close scrutiny. The information selected represented the life events that I believed might be significant in the process in which the participants changed their environmental behaviour. An example of the interview schedule for the main study interviews can be found in **Appendix G**.

When preparing the prompt questions, the rapport that I had previously built with the participants through Facebook proved to be particularly useful. In the beginning, the main reason for adding the participants to my Facebook 'friends' list was for convenience when clarifying issues concerning the exploratory interviews. However, through their posts on this social medium, I was given additional information about their life stories. The addition of these data from Facebook is a measure of triangulation of data sources that I took for enhancing the trustworthiness of the current study (Guba, 1981; Shenton, 2004; Thurmond, 2001). Hence, I was able to obtain ideas for developing prompt questions, particularly with regard to the participants' life experiences. My experience using Facebook in this study led me to concur with Unger, Wodak and KhosraviNik's (2016) views on the usefulness of social media for preparing data collection, especially for engaging participants and building rapport; social media certainly proved useful and rapport building was definitely enhanced. In addition, my experience reflected the findings of Whiting and William's (2013) study.

These authors concluded that Facebook enables one to get information about others; increases contacts with people; and provides the users of the social media with subjects to talk about with others although it does not involve face-to-face communication.

Having reflected on the exploratory interviews, I realised that it would have been useful to the participants to have been given a general outline of interview topics in advance which would have helped them to retrieve information from their memories prior to the interviews. I therefore sent this information to them before conducting the main interviews and alerted them to the fact that the focus would be on the environmental actions they had performed since the previous interview, together with some questions about other environmental activities they had been involved in apart from attending the ROEE course.

ii. Administering the main study interviews

A total of 11 participants were interviewed at the exploratory stage. For conducting the main study interview, each of them was contacted in December 2015, mainly by email and Facebook, to inform them about my intention to conduct a second interview. Similarly to the approach that was used for approaching them to invite them to participate in the exploratory interview, there was no standard format of email/message used. Instead, I used the rapport that had been built with each of them to explain the purpose of the main interview and to obtain consent for their participation. However, only nine agreed to participate in the main interviews. These interviews were conducted between 26<sup>th</sup> of March and 24<sup>th</sup> of April 2016. Two participants declined to be interviewed in spite of my attempts to persuade them.

The main interviews were conducted using three media which were: face-to-face, by Skype and by telephone. Due to practical reasons, only one participant was interviewed face-to-face as she lives in Edinburgh – the city where I lived when the study was conducted. Therefore, I suggested to the other eight participants that the interviews would be conducted using Skype. The decision to use this medium was informed by the discussion in **Section 3.4.5.3**. To recap, a Skype interview was thought to be the best alternative to the face-to-face interview. The issue of rapport-building, which Deakin & Wakefield (2013) and

Hanna (2012) identify as a key distinguishing feature of the face-to-face interview, was not in my view a significant concern with these main interviews. This is because I believed that the rapport that I had built with the participants during the period since the previous interview was good enough that the effectiveness of the interviews was not impaired. However, in the event, only six interviews were conducted using Skype (a video call), and in two instances the participants were interviewed by phone.

As a result of the participants' personal and professional commitments, as well as the time zone difference between Malaysia (where seven of the participants lived) and the United Kingdom, setting a convenient time for interviews was not an easy task. In addition, one participant was living in Edinburgh and one in Switzerland. In the event, having previously agreed a date and time, three participants did not log in at the appointed time. Thus, the time of interviews had to be rearranged with these three absentees. Because of this delay the time taken to complete the main interviews was nearly a month even although only nine participants were being interviewed. However, this issue was not surprising as Deakin and Wakefield (2013) note that such a situation is likely to occur. All of the Skype interviews were recorded with the consent of each participant using a software package, namely 'Pamela for Skype'. This software offers many useful features to control and customize Skype calls – i.e. video and audio calls, but the main reason I used it was because it is easy to use.

With regard to the two participants who were interviewed by telephone, one informed me that his location had a limited internet connection, thus making it difficult to arrange interviews using Skype. The other participant explained that he was not 'tech-savvy' and suggested that the interview should be conducted by telephone. I decided, because of these difficulties, that these two participants should be interviewed by telephone. I had conducted telephone interviews during the exploratory interviews, and had found that this approach had no significant impact on the quality of the interviews. The telephone interviews were audio recorded using the Voice Memos application in an iPhone which was also used in the exploratory interviews.

The average duration of the interviews was 57 minutes which was significantly longer than the average duration of the exploratory interviews. I found that the more structured format of the interview, supported by probes and prompt questions that had been carefully

planned in advance, helped the participants to provide more elaborate responses. Although the main interviews were designed to gather more in-depth responses, there was also an intention to achieve breadth in the responses. As I probed their answers, the participants created their own narratives and introduced other topics to the discussion. However, I was careful when exploring the new topics to ensure that I did not allow the narratives to deviate significantly from the focus of the main interviews. The rich data which were obtained using this approach was, in my view, also the result of the decision to provide the participants with the key questions prior to the interviews.

Having presented the process by which the main interviews were administered, I now turn to describing the methods that I used for analysing the data gathered from the nine participants who participated in the main study.

iii. Analysing the main study interviews

This stage of analysis produced the findings for the main study and the answers for the research questions. In addition, I at all times remained alert to unexpected findings which emerged during the analysis stages, in a process of abductive reasoning. In the paragraphs which follow, therefore, I explain these methods briefly.

The data analysis began with gaining insights into, and make sense of, data. For this reason, I carefully followed the procedures that I had previously employed during the process of analysing the exploratory interviews and which I have discussed in detail in section **Section 3.4.5.4**. These procedures include the process that was adopted for transcription and also the methods of analysis that were explored in the literature on grounded theory and narrative analysis. Drawing on these elements ensured that a fine-grained approach to analysis was adopted which resulted in rich and interesting findings that are presented in **Chapter 4 – Findings 1: Vignettes**.

Although the approach to the analysis of the data at this stage was more deductive than in the exploratory interviews, I remained open to interesting and unexpected findings by adopting an abductive approach. As a result, I found that the diversity of environmental behaviour can be explained more diverse ways than previously thought. Six additional

binary themes were added to the original three themes that emerged following the analysis of the exploratory interviews. These are presented in **Chapter 5 – Findings 2: Binary themes**.

### **3.5 Trustworthiness**

Trustworthiness is commonly one of the main topics of discussion in a qualitative study. The central idea of the discussion is about the truthfulness and the truth of the research data and data analysis (Williams, 2002). The discussion of trustworthiness establishes researchers' confidence about the truth of their research findings, based on the methods that they adopted (Krefting, 1991). However, Williams (2002, p. 1) posted a provocative statement, "...there is an equally pervasive suspicion about truth itself: whether there is such a thing; if there is, whether it can be more than relative or subjective or something of that kind..." suggesting that truthfulness and truth should not be earnestly contested because their existence could be unrealistic. He invokes this idea by alluding to the dispute about history, in which he thinks the truth about the past is often biased, ideological and self-serving (Williams, 2002). Despite that, justification of a qualitative research's trustworthiness is still demanded in academic discourse in order to show the distinctive contribution to the development of knowledge that a particular study is attempting to make (Loh, 2013).

In a life history study, as Williams (2002) suggests, the issue of trustworthiness can be even more contested. On top of that, due to its nature, it depends on memory-based data. The information provided in the interviews was very likely to depend on the extent to which the participants remembered accurately about the ROEE that they attended and other life experiences. In addition, it depended on the limits of the person's awareness of their self-knowledge of the experiences (Barker, et al., 2002). However, this seems unavoidable in the current study as the interest of the study relies on enquires into the life experiences. In the section on **Life History** at the beginning of this chapter, I have explained my justifications for adopting this approach, despite the arguments around this issue. In addition, the measures that I took to enhance the trustworthiness of the current study also have been explained throughout the section on **Research Design**. In the paragraphs that

follow, I briefly restate these measures, which are mostly adapted from suggestions made by Guba and Lincoln (1981), Krefting (1991), Lietz and Zayas (2010) and Shenton (2004).

Triangulation in general means combining methods (Patton, 2002). Specifically, there are several types of triangulation for enhancing trustworthiness. Among them are triangulation of theory, triangulation of data sources, triangulation of analytical methods, and triangulation of researchers. The purpose of all of these types of triangulation is to gain multiple perspectives about the subject of enquiries (Guba & Lincoln, 1981; Krefting, 1991; Shenton, 2004; Thurmond, 2001). In the current study, I adopted to use triangulation of data sources and triangulation of data analysis, in the ways presented in the next two paragraphs.

First, the triangulation of data sources was achieved through four phases of data collection – i.e. documentary analysis, questionnaire survey, exploratory analysis and main study analysis. This strategy of triangulation means that the current study offers a comprehensive understanding about the topic of the enquiry as the aggregated data is rich. However, the final findings presented are based on the data that were gathered from the last two phases. The fact that the interviews were conducted at two different times and were focusing on different kinds of information allowed me to verify participants' viewpoints and experiences which led to a better understanding of the enquiries that were under scrutiny (Shenton, 2004). In addition, in the documentary analysis, I used as much primary source data material as possible to avoid double interpretation which, I believe, can change the essence of the original meaning of the content of these documents. The documents were retrieved from established repositories, such as from the government's official websites and the documents used are therefore believed to have provided me with authoritative data based on the best and most credible sources.

Second, the triangulation of data analysis was conducted through the combination of inductive and deductive methods of analysis. More precisely, data was analysed abductively to entertain all possible explanations for the observed data (Charmaz, 2006) through bottom-up and top-down analysis. This was to ensure that all aspects of the phenomena of environmental behaviour change have been investigated comprehensively.

A study is usually considered to have adopted triangulation of researchers when the study involves more than one observer, interviewer, coder, or data analyst (Thurmond, 2001). In the current study, instead of using triangulation of researchers, I employed a debriefing technique, in which I consulted on my findings and analysis with my academic supervisors and colleagues. The purpose of this was to decrease the potential of bias in analysing and reporting findings, and to keep me honest in researching (Guba, 1981; Lincoln & Guba, 1985; Maritz & Jooste, 2011; Roulston & Shelton, 2015; Yin, 2011).

In the sections on the methods used for the exploratory interview and main study interview, I explained that the data that were gathered from both interviews were transcribed verbatim (Cohen et al., 2007). The data transcripts also were kept in the original language used by the participants during the interviews, in which most of the participants spoke Malay. Translation of the data was only done when the findings were reported, that is, after the data had been completely analysed. Roulston (2010) believed that conducting a study on the basis of understanding, respect and trust would eventually encourage participants to provide data comfortably and enhance the trustworthiness of the research data. For that purpose, several actions were taken. First, the recruitment of the participants was voluntary, and I convinced the participants that their participation would be kept anonymous. Second, I established a rapport with participants as suggested by Gray (2013) and maintained it throughout the processes of arranging interviews with the potential participants for the exploratory interview, during the introduction in interviews sessions, and through 'friendship on Facebook'. Third, I allowed the participants to narrate freely about their other experiences (and knowledge) during interviews without being excessively firm in directing them back to the focus of the study. This strategy also proved to be helpful for dealing with the issue of memory-based data. Many participants were able to recollect their memories of their ROEE experiences and other experiences and to make links between the experiences. I also allowed the participants to take time to recollect their memory when answering all my interview questions. In addition, I regularly sought clarification about their responses from the participants. The latter was especially to ensure that I captured the meaning of the data from the participants' perception correctly. These decisions were made to enhance the trustworthiness of this study by minimising the potential for the meaning of the experiences to be misinterpreted while analysing the data. In addition, the translations of extracts of the interviews were validated using the back-

translation technique (Bernard, 2000) with the assistance of a Malaysian PhD student majoring in Teaching English to Speakers of Other Languages (TESOL).

It is acknowledged that the small size of the study sample among a large sample population will cause debate about the transferability of the research findings in this study, that is, the degree to which the findings can be generalised to another context, setting or population. However, a small sample size is in keeping with a life history approach to enquiry, where it seemed to me that generalising is not the aim of that approach. Since individual experiences are very likely to be different from one another, it is understood that they deserve to be treated exclusively. This idea is compatible with the literature on phenomenology, which also emphasises that data about ones' experiences are potentially subjective, intuitive and impressionistic (Pringle et al., 2011). For this reason, Creswell (2013), Morse (1994) and Smith (2004), for example, all suggest that it is acceptable to present data for such studies for five to ten participants only. Hence, although I believed that a rich data set was important, I did not think that the small number of participants was a main concern (Wagstaff et al., 2014). In addition, in order to avoid misunderstandings of readers about the transferability of research findings, I also provided dense background information about the participants and the context of the study (Krefting, 1991).

Having outlined the key measures taken to enhance the trustworthiness of the current study, I believe that the findings that have emerged from the methods described in this chapter are robust.

### **3.6 Ethical considerations**

According to MacFarlane (2009), real research about human life is associated with hope and disappointment, loyalty and betrayal, triumph and tragedy. McCay-Peet and Quan-Haase (2017) warn that the use of social media should reflect 'best practice' that complies with any potential ethical issues. Gaining informed consent from participants is the central topic of debate when using social media for collecting research data, and McCay-Peet and Quan-Haase (2017) note that many people are unaware that the information they provide on social media could be published. In the current study, in line with the conclusions of Leary (2008) and Orb, Eisenhauer and Wynade (2001), careful consideration was given to all

possible ethical tensions. The desire to produce beneficial research outcomes while, at the same time, carefully protecting the rights and privacy of participants informed all methodological decisions.

In the current study, I was aware that ethical tensions could have occurred at several key stages. In this section, the measures taken for addressing potential ethical tensions are presented according to the following stages of the research: before the interviews; during the interviews; and after the interviews.

### **3.6.1 Before the interview**

Ethical considerations before interviews involved two main measures. The first measure concerned ethical approval that was obtained before the questionnaire survey was conducted. Researching for a Ph.D. in Education at The University of Edinburgh required me to obtain ethical approval from the Moray House Ethics Committee if the study intended to cover novel procedures, topics of a more sensitive nature, or the use of atypical participant groups, or if the study was potentially problematic in that it might incorporate an inherent physical or emotional risk to participants. However, none of these are applied to the current research that I conducted. Therefore, the ethical measures were only discussed with and got approval from my academic supervisors.

The second measure of ethical consideration before the interviews concerned protecting the authority and rights of the research participants. As explained in **Section 3.4.5.1**, the sampling method of this study involved sending emails to the organisers of ROEE programmes, posting an advertisement on Facebook pages, and a link to an online survey that was created using SurveyMonkey. Subsequently, the explanation about the current study – for example, a brief introduction about myself as a researcher, the aims of the study, the participants' right to withdraw from the study, and confidentiality assurance – were given in all of these tools (email, advertisement and online survey). At the end of the online survey, there was a non-mandatory section for the potential participants to answer. This section asked the potential participants to give their contact details if they agreed to participate in the data collection process, which was done through interviews. The contact

details obtained in this section were considered as their early consent to participate in the study.

### **3.6.2 During the interview**

During interviews (both exploratory and main study interviews), another measure was taken to protect the participants' authority and rights, which was, by gaining verbal consent from them. While introducing the current study at the beginning of the interview session, the participants were given an oral explanation about the study. Although they were already informed about their authority and rights several times before the interview, the verbal explanation of them was repeated to make sure that the participants were aware and understood them well. This also gave them opportunities to enquire further about the study in which they were participating. After they were satisfied with the explanations, the participants were asked to sign a form which can be found in **Appendix G** as evidence of their consent. Although the personal information (name and email address) given in the questionnaire survey and their presence at the interview venue could be supposed to indicate their consent, I believed that evidence of written consent was important to avoid unexpected ethical problems which might arise later. In addition, at the end of interviews, I asked permission from the participants to keep in touch with them. The permission was sought also to enable me to contact them again if I needed additional information or clarification about the data they provided.

### **3.6.3 After the interview**

Ethical considerations after the interviews were dealt with in two phases, which were during data analysis and while reporting findings.

The relationship between researchers and participants can lead to ethical objections if the researcher allows him/herself to influence the data (Haverkamp, 2005; Orb et al., 2001).

The ethical objections will occur when:

... the person of the researcher becomes an integral part of the research process in ways that reflect the axiology of particular

paradigms. This is premised on the post-modern idea that the researcher's value, personal history, and 'position' on characteristics such as gender, culture, class, and age are inescapable elements of the inquiry. (Haverkamp, 2005, p. 147)

In such a situation, the ethics of doing the research seem to be challenged due to biased analysis. Biased analysis can also lead to challenging the trustworthiness of a study (Lietz & Zayas, 2010). To deal with this issue, a number of measures were taken in the current study through reflexivity on my position as the researcher, triangulation of analytical methods and triangulation of researchers. The details about these measures are presented in **Section 3.3.1** and **Section 3.5**.

The target population and subject matter can be controversial if the study involves children, pregnant women, elderly people and malnourished people (World Health Organisation, 2015), or if the study involves the possibility that the participants might be under threat in terms of harm, stress, anxiety, discomfort, boredom, pain and other aversive states – physical and psychological – from the study (Leary, 2008; Robson, 2011). In studies that involve such vulnerable people, it is very important to protect the confidentiality of the research participants. The term confidentiality refers to the assurance that the data provided by the participants will only be used for the purpose of the study conducted, without divulging it to others (Leary, 2008, p. 340). Although none of the participants in the current study belonged to any of the groups listed above or met the criteria listed above, I decided to maintain the confidentiality of the participants for the purpose of avoiding unforeseen problems. This decision was supported by de Vaus (2001) – according to him, regardless of how sensitive (or not sensitive) the target population and the subject matter of the study are, participants have the right to expect that they will not be identified as the source of the data. I therefore report the research findings using pseudonyms, and any background information which I deemed could lead to their identities being discovered was made obscure. In addition, only the researcher has access to the data. This assurance was made clear to the participants at all stages when informed consent was obtained from them.

### **3.7 Chapter summary**

The aim of the current study described in this section was to investigate how Malaysian ROEE programmes had influenced environmental behaviour change in their former participants, and how the participants' subsequent life experiences influenced any change complementarily or separately. The study was underpinned by a constructivist paradigm that led to the adoption of a qualitative research design. A quantitative design was thought not to be appropriate because research questions that were developed based on the research aim sought answers of subjective views. In order to answer research questions, the current study was therefore conducted framed by the combined ideas of constructivist grounded theory, life history and the TTM. Overall, the current study involved four phases of data collection, which were documentary analysis, questionnaire survey, exploratory interview and main study interview. In general, the function of the earlier phases was to inform the decisions for the next phase of data collection. Different approaches were used for each of these four phases, all of them deliberately chosen to enhance the trustworthiness of the study. The following two chapters present the results of adopting the methods that are outlined in this chapter.

## Chapter 4 FINDINGS 1: VIGNETTES

### 4.1 Chapter overview

In the previous chapter, **Chapter 3**, I presented the research questions for the current research, provided a detailed account of the methodological decisions made and the research methods that were adopted to allow me to find answers to the research questions. Grounded theory and life history approaches were of central importance to the overall methods adopted for this research. They also informed my decisions concerning how the findings of this research would be presented. In order to provide full accounts of the nuanced, complex and rich data set, I decided to present the research findings in two ways that complement one another: the first is the result of my analysis of the participants' journeys, over time, within their individual personal life histories; and the second is a thematic analysis within individual accounts and across the whole set of interview transcripts.

In this chapter, I focus on the presentation of the findings that were generated from analyses of the two interviews that were conducted with each participant, while the thematic findings are presented in **Chapter 5**. The longitudinal findings in this chapter are presented through four vignettes. In the vignettes, the environmental behaviour changes over time that were experienced by these former ROEE participants throughout their life courses are charted using the Transtheoretical model (TTM), which is the theoretical framework adopted for the present study. In addition, the changes are presented chronologically so as to allow me to explore and identify causality patterns within the events that occurred in the participants' life histories.

This chapter is divided into seven sections. I begin with a justification for my decision to present the findings using vignettes. Next, I discuss my reasons for the selection of the particular vignettes and then present the four vignettes, before concluding with a brief summary of the overall findings that are presented in this chapter.

## 4.2 Justifications for presenting findings through vignettes

According to Hughes (1998, p. 381), “vignettes can be described as stories about individuals and situations which make reference to important points in the study of perceptions, beliefs, and attitudes”. They present a snapshot of a selected portion of participants’ responses to the questions they were asked (Barter & Renold, 2000; Hughes, 1998). The purpose of this is to allow participants’ actions to be explored within the context of their individual journeys and to explore and clarify their judgements (Barter & Renold, 1999) in such a way that the presentation of the information provides a greater focus and uniformity in the data (Wilks, 2004). Taking account of these purposes, I concluded that using vignettes in the current study to present the findings was appropriate given the life history approach which was adopted, which emphasises the real lives of real people. However, while Hughes (1998) suggests that a vignette is appropriate for the study of perceptions, beliefs, and attitudes, the current study used this approach also to present findings which focus on actions and behaviours.

The vignette process is highly dependent on the authority of the researcher, who chooses which portions of data should be highlighted and how this should be organised into a coherent account. Therefore, vignettes make an explanation less personal, which provides less-threatening perspectives for exploring sensitive topics (Barter & Renold, 2000; Hughes, 1998). The current research, however, did not investigate sensitive topics; rather, it sought to map a range of environmental behavioural changes that occurred across the participants’ lifespans. Presenting the findings in this way, therefore, required me to map the behavioural changes as perceived and reported by the participants within their personal social realities. This is because what the participants perceive to be the reasons for their behavioural changes in a given situation may not necessarily or accurately depict what the reasons are in reality, which Barter and Renold (2000) acknowledge is another characteristic of vignettes. Therefore, as suggested by Barter and Renold (2000), the use of vignettes was deemed appropriate for exploring other possible answers to research questions within the participants’ social contexts throughout their life courses, while attempting to understand and examine their judgements.

In addition, this method for presenting the findings is in keeping with the concept of constructivist grounded theory which underpinned this research. The findings presented in

the vignettes are the evidence of the interactions between me – the researcher – and the participants in creating knowledge (Charmaz, 2014) as I captured tacit elements and provided a discursive interpretation of the data (Hughes, 1998; Suddaby, 2006). Finally, the findings from the presentation of vignettes in this research prepare us for the thematic analysis and presentation of the data in the next chapter, **Chapter 5**.

### **4.3 Justifications for selection of vignettes**

As mentioned earlier in **Section 3.4.5.4**, the findings of the current study are presented based on a combination of the data gathered from the nine participants who participated in both the exploratory and main study interviews. From these nine participants, I present four vignettes. The decision to present only four vignettes was made based on Barter and Renold's (2000) suggestion that vignettes can be selected to depict different forms of the events studied, which, in this research, are patterns of environmental behaviour change.

In order to identify and attempt to explain different patterns of environmental behaviour change in the participants' accounts, I used the Transtheoretical model (TTM) to frame my analysis. The TTM proposes six stages of behavioural change: pre-contemplation, contemplation, preparation, action, maintenance, and termination (Prochaska & Velicer, 1997) (see a full definition of each stage in **Section 2.7.1**). Two things appear to distinguish one stage from another: the degree to which someone is ready to change his/her behaviour; and the extent to which someone may be tempted to regress (Prochaska et al., 1992; Spencer et al., 2007). As depicted in **Figure 2.2**, which has been replicated from a study by Howell (2012), behaviour change progresses through each of the stages in turn. In order to reach any of the later stages of behaviour change, one would have to move through each of the previous stages. For example, someone who had reached the stage of action would have progressed through the stages of pre-contemplation, contemplation and preparation. Similarly, someone who undertakes a particular action for more than six months (the stage of maintenance in the TTM) would begin with a one-off action (which is the stage of action in the TTM). Importantly, as can be seen in the vignettes and the thematic analysis of the data, it is possible to regress.

I analysed all nine participants' environmental behaviour changes based on the stages of change the participants reported in four phases of their lives, which were: before they attended ROEE; immediately after ROEE; following their participation in ROEE until the exploratory interview; and after the exploratory interview. The results of this analysis are shown in **Table 4.1**. In the figure, there are three colours of 'X': black, red and green. The black 'Xs' indicate the stages of change that were identified during the interviews, while the green 'Xs' are the stages that were achieved based on the impact of their participation in the ROEE. The red 'Xs' refer to the stages that may apply if Prochaska's (2008) model existed in some kind of linear form that was not influenced, over time, by personal and social factors (Prochaska et al., 1992; Prochaska et al., 2008; Prochaska & Velicer, 1997; Xiao et al., 2004b).

**Table 4.1** Progress of environmental behaviour change throughout participants' lifespan

Respondents	PHASE 1 Before ROEE						PHASE 2 Immediately after ROEE						PHASE 3 Later after ROEE						PHASE 4 After the exploratory interview						Experienced regression	The event that caused the notable change
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6		
Alia	X	X	X	X			X	X	X	X			X	X	X	X	X		X	X	X	X	X			Living in Edinburgh
Azhari	X	X	X	X			X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X (Phase 4)	Participation in associations during tertiary education
Borhan	X						X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X		Working at an environmental research centre
Faizah	X	X	X	X			X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X		Teaching at rural area and enforcement
Felix	X						X	X	X	X			X	X	X	X			X	X	X	X				Teaching Biology at school
Halina	X	X	X	X			X	X	X	X			X	X					X	X	X	X	X		X (Phase 2 & 4)	Living in Switzerland
Izzah	X	X	X	X			X	X	X	X			X	X	X	X	X		X	X	X	X	X		X (Phase 2 & 4)	Enrol into university
Khairul	X						X	X					X	X	X	X	X	X	X	X	X	X	X	X	X (Phase 2)	Working in military
Raju	X						X						X	X	X	X	X	X	X	X	X	X	X	X		Academic affiliation

1 – Pre-contemplation  
2 – Contemplation

3 – Preparation  
4 – Action

5 – Maintenance  
6 – Termination

The TTM has been used in research to describe changes in a particular action or behaviour. For example, the TTM was used by Aveyard et al. (2009), Erol and Erdogan (2008) and Ruggiero et al. (2000) to study smoking behaviour. Nigg (2001) and Sarkin et al. (2001) applied the TTM in studies on the behaviour changes experienced while engaging in physical exercise. However, the changes of stage that are indicated in **Table 4.1** do not refer to only one type of environmental action. Instead, they cover various environmental actions that were reported by the participants.

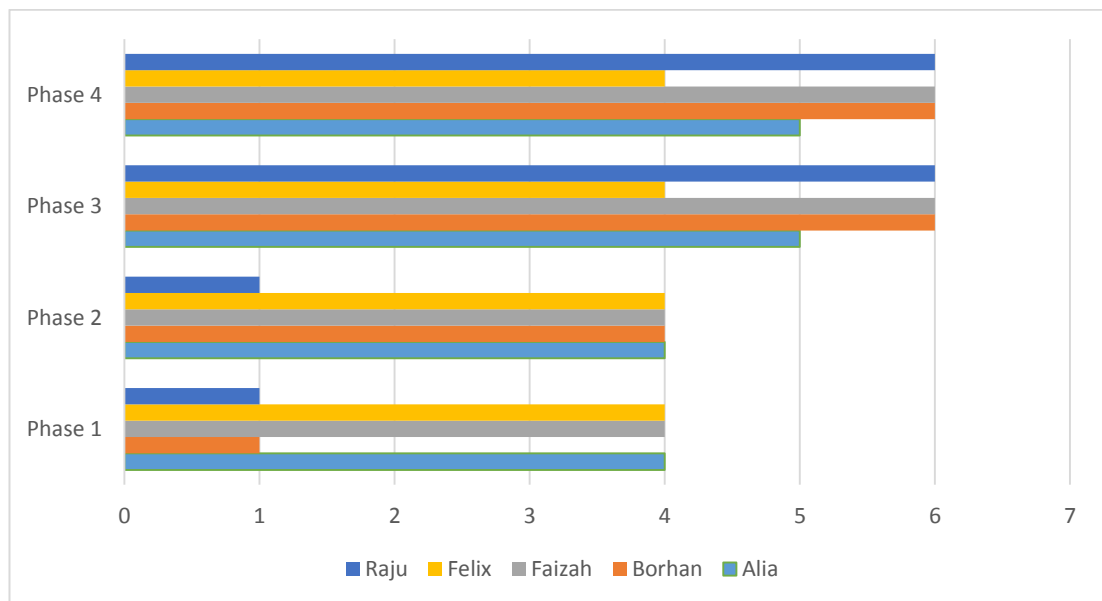
The selection of the four vignettes was guided by the gap in the literature concerning the use of the TTM that was identified by Lipschitz et al. (2015, p. 593), who concluded that “questions remain about the degree to which major TTM constructs differentiate between maintainers, relapsers, and nonchangers over the longer terms”. In their study, maintainers, relapsers, and nonchangers refer to the different groups of individuals with comparable longitudinal patterns of change: maintainers are participants who moved to action or maintenance through final follow-up actions; relapsers are those who moved into action/maintenance at the 12-month point, but subsequently moved back into a preaction stage by the final 24-month point; and nonchangers are those who remained in the preaction stages at both follow-up time points (Lipschitz et al., 2015). Analysis of the two interviews undertaken with each of the participants revealed that each could be placed in one of these three groups, and that each one demonstrated a different pattern with regard to their environmental behaviour change over time. However, in the current study, these definitions were further refined through a fine-grained process of analysis.

Here, maintainers are participants who experienced a change in their environmental behaviours starting from any lower stage of change to higher stages of change, little by little, in a manner that is less obvious. Relapsers are those participants whose behaviour reverted to previous stages, having originally moved from a low to a higher stage of change. Nonchangers are those who remained in the same stage of change for extended periods of time. In addition, the outcome of my analysis identified another group – the transcendents. Transcenders are participants who experienced a notable environmental behaviour change from a lower stage to a higher stage of change in a very short time period.

As shown in **Table 4.1**, it was apparent that there were four participants – Azhari, Halina, Izzah and Khairul – who were relapsers, as they experienced regression(s) in the change of

their environmental behaviour throughout the four phases that I studied. To identify the maintainers, nonchangers and transcendents, data from **Table 4.1** from the other five participants who did not experience regression were presented in the form of a clustered bar chart as shown in **Figure 4.1**. As a result, Borhan was identified as a maintainer and Raju was a transcender, while Faizah, Felix and Alia were nonchangers.

**Figure 4.1** Clustered bar chart for identifying maintainers, transcendents and non-changers



Based on the four patterns of environmental behaviour change that were identified, I chose to present the vignettes of Halina, Raju, Felix and Borhan in the sections that follow. Given that more than one participant belonged to the group of relapsers and nonchangers, I now explain my decision to present the participants who were selected.

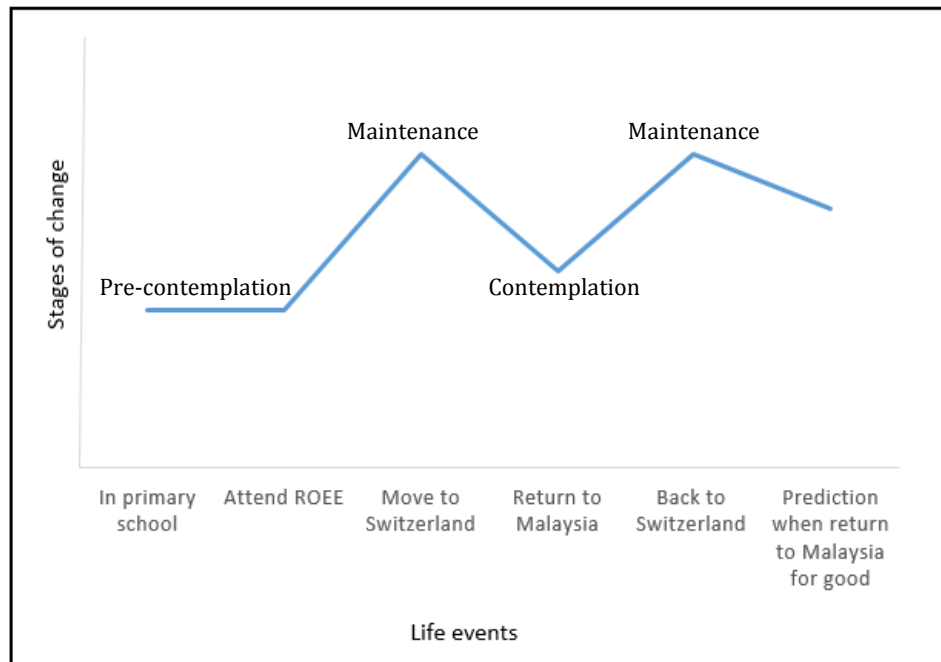
It is important to note that the first vignette, the **Vignette of Halina: A 'Relapser'**, is considerably longer than the other three vignettes. There are two main reasons that account for this situation. First, I provided more evidence in the first vignette to show how I thoroughly analysed the interview transcripts. It was not necessary to repeat this with the subsequent vignettes. Second, the subsequent vignettes are shorter because I have not repeated the discussions of the findings that are already elaborated in previous vignettes. I

only identify briefly findings that are similar to the previous vignettes, but I do elaborate when the findings are different in a significant way from the others. Findings from the vignettes inform the themes that are presented in the thematic chapter.

#### **4.4 Vignette of Halina: A ‘Relapser’**

There are four participants who experienced fluctuating environmental behaviour changes – Azhari, Halina, Izzah and Khairul. However, I chose to present the vignette of Halina for three reasons. In comparison with other participants, Halina spoke more eloquently and confidently about her ROEE experience and its impact on her subsequent environmental behaviour. The other three participants had some difficulty with articulating their thoughts. This is significant in relation to the life history approach that I used in this study. Given that this approach relied significantly on memory-based data, the possibility that participants could provide a detailed and accurate account could be challenged (Barker, et al., 2002; Chawla, 2006). From the nine participants, Halina was the most willing to participate in this study. When I met Halina for the interview in 2014, she brought along the certificate of her participation in the ROEE. Because of this, I concluded that her ability to narrate her ROEE experience eloquently and confidently was the result of her initiative in preparing herself to participate in this research. Second, she talked well about the subsequent environmental behaviour changes that she experienced before and after the exploratory interview. The third reason was her experience of living in Switzerland. This made her unique and distinct from the other participants who had never lived abroad – with the exception of Alia who lives in Edinburgh. This distinctive characteristic allows me to provide an extended explanation of quantitative findings from the study conducted by Li and Chen (2015). Li and Chen (2015) list the experience of living overseas as one of 19 experiential and non-experiential factors that influence the development of environmental actions. From the extensive literature that I reviewed, I found no other study that provided an explanation of this factor. Informed by these characteristics, Halina provided an interesting account of her environmental behavioural change. The events in her life, which brought about these changes in her environmental behaviour, are depicted in **Figure 4.2** below.

**Figure 4.2** Halina's progress of environmental behaviour change throughout the events in her life



In the sections which follow, specific details of the environmental behaviour changes that emerged during the interviews with Halina, and what brought about these changes, are provided.

#### 4.4.1 Before ROEE

Before attending the ROEE course, Halina's environmental behaviour relied on opportunities provided by other people. She had been involved in several environmental activities within her school community that were initiated by her teachers:

It is common to have communal work at school isn't it? As I remember, our teacher made a duty roster for us to take turns picking up rubbish every morning. So, [for example] after the morning assembly, there would be students from a certain classroom assigned to pick up rubbish at the school field.

Halina was not able to describe whether she had undertaken any particular environmental actions on an individual basis. Her response was ambiguous, but she indicated that her behaviours would not have caused serious environmental problems. One may assume that

this situation could be explained as a result of the long time lapse that limited her ability to recall, or that her environmental behaviour may have been limited because there is not much that can be done as a child. However, Halina did identify this as a possible reason:

Maybe because there was lack of exposure about the environment, and how to manage wastes... but, it was not to the extent that I littered.

With reference to the definition of stages of change identified by Prochaska et.al. (1992), Halina's environmental behaviour was erratic before she attended ROEE. It is reasonable to suggest that she was in the stage of pre-contemplation for participating in environmental actions individually as she did not indicate she had any intention of taking action in the foreseeable future. However, her environmental actions in groups had reached the stage of action.

#### **4.4.2 Participation in ROEE**

The ROEE course that Halina attended was called "Science and environmental camp". It was specifically organised for Standard 6 students (12 years-old), who sit a national examination called *Ujian Penilaian Sekolah Rendah, UPSR* (Primary School Evaluation Test). Science is one of the subjects that are tested in UPSR. Perhaps because of this, Halina believed that the ROEE was primarily designed to teach the participants about science by using outdoor approaches, instead of teaching them about the environment:

The content was related to the school curriculum. For example, the learning, we learned about photosynthesis while observing plants. And it was the science teachers that accompanied us. So, it was more about science.

Since Halina did not recognise that the purpose of the ROEE course was to educate her about the environment, this raises the question of how the course could have influenced her environmental behaviour.

#### **4.4.3 Prelude to Halina's notable environmental behaviour change**

Halina experienced a notable environmental behaviour change through her experience of living in Switzerland (especially after the exploratory interview), which I present in the next section. However, before she reached that phase, she experienced two events that caused the progress of this change to fluctuate.

The first event was immediately after the ROEE course. There was a sense that the course had somehow triggered motivation for Halina to undertake environmental actions. With reference to the description of stages of change by Prochaska et al. (1992), Halina reached the stage of contemplation to recycle. It was an impressive achievement considering that she had never recycled, or ever intended to recycle, before attending the ROEE. In addition, at that time there was no rule or law in Malaysia that required her to recycle. The findings suggest that she had gone through a transfer of learning process to a certain degree, where she was able to identify the parallels between the ROEE experience and her own daily conditions. The progress that Halina made could be the result of the strategic approach used by the organiser of the ROEE course, as the course integrated environmental knowledge with science learning. An integrated approach appears to have a similar impact to that adopted by ESD, particularly the approach of ESD 2 and transformative environmental education. In the literature on ESD, both ESD 2 and transformative environmental education require learners to develop the skills to analyse, to question alternatives, and to negotiate their decisions in order to decide which environmental values are right or wrong in certain circumstances (Ashley, 2005; Jickling & Wals, 2008; Vare & Scott, 2007). The environmental science knowledge learned at the ROEE therefore could have enabled Halina to make this judgment about environmental values based on scientific argumentation that is supported by observable and objective evidence (Yang, 2004). If this is the case, my analysis suggests that the integrated approach that was used in the ROEE provided Halina with an opportunity to go through a process of environmental re-evaluation. This process involves evaluating the impact of one's behaviour on his/her social and/or physical environment through cognitive and/or affective assessment (Prochaska et al., 1992). In the TTM, environmental re-evaluation is one of the three processes that are especially proposed to encourage those who are in the stage of pre-contemplation to move to the stage of contemplation (Prochaska & Velicer, 1997). Therefore, an integrated

approach was appropriate for her because she was at the stage of pre-contemplation, especially with regard to her individual environmental actions.

According to the TTM, those who have reached the stage of contemplation could progress to the next stage of change, the stage of preparation, by going through the process of self-re-evaluation (Prochaska & Velicer, 1997). While preparation is the stage in which people have become more equipped to take action, usually within 30 days, the process of self-re-evaluation involves cognitive and affective assessments of current behaviour, and consideration of the appropriateness of behaviour in particular circumstances (Prochaska et al., 1992). However, there is no evidence that suggests that Halina had subsequently experienced any event that enabled her to go through the process of self-re-evaluation. Rather, Halina reported that her intentions to practise recycling faltered – a situation which she claimed was due to the lack of social support from her family:

There was also a time I wanted to practise recycling. But, my family simply threw the wastes. So, there should be some support from family members. They should also have the awareness... It was only me who segregated the bottles, but they simply threw them away. I became demotivated.

Her family became the source of disturbance for Halina, as they hindered her efforts to achieve the sort of continuity of experience that might have allowed her to move to the next step in her learning. The disturbance could perhaps have been overcome with some degree of intellectualisation and reasoning on her part to investigate the conditions (Miettinen, 2000) for finding alternative ways to turn her intentions into action. However, the degree of the disturbance appears to have been so strong that it created a barrier that prevented her from fulfilling her intentions.

From a different perspective, the way Halina described the influence of the social support from her family on her environmental behaviour change fits the description of the interplay between locus of control, attitude, subjective norms and intention to act provided by Ajzen (1991). Locus of control is described as the individual's aptitude to make change to the environment through his/her own action (Hines et al., 1987; Hungerford & Volk, 1990; Hwang et al., 2000; Mittendorff et al., 2012). According to Ajzen (1991), in his theory of planned environmental behaviour, the influence of locus of control on the intention to act is mediated by attitude and subjective norms. While the former refers to

“the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question”, the latter refers to “the perceived social pressure to perform or not to perform the behaviour” (Ajzen, 1991, p. 188).

Similarly to the way she had previously involved herself in environmental activities through the opportunities provided by the schools and the teachers, after the ROEE course, Halina was hesitant to conduct environmental actions on her own. She depended on social support from her family to recycle at home and it appeared that she believed that she could only bring about a positive outcome if her family was also involved. It is, of course, important to note that recycling can also be performed individually.

The benefit of conducting pro-environmental actions in groups can in part be explained by the power that social groups exert over their individual members. Social groups can be based on, for example, nationality, religion, ethnicity, culture, political party, or other smaller organisational groups such as family, friends and colleagues, and it is possible to be a member of several groups at any one time (Fisher, 2012; Johnson & Johnson, 2009; Levi, 2015). According to Forsyth (2014), Johnson and Johnson (2009), and Levi (2015), being in a group can be advantageous when the group helps someone to achieve goals that cannot easily be achieved individually, or to amplify the impact of a particular group goal. Group goals establish the rules that direct and motivate the members to perform planned, coordinated and cohesive actions or behaviours (Carron & Brawley, 2012; Carron et al., 1998; Johnson & Johnson, 2009; Pipas & Jaradat, 2012; Salo (2011); Senécal, Loughhead & Bloom, 2008). However, in the case of Halina, there was an absence of a group goal to recycle. There was no clear indication of whether her family had a particular stance regarding the practice of recycling. When specific goals are absent, there are no guidelines for how particular actions should be performed; and in this case Halina was therefore left to make her own decision regarding whether or not to continue with the action. As Fisher (2012) and Johnson and Johnson (2009) argue, a group can have constructive effects on one’s life, as well as deconstructive effects.

As Levi (2015) suggests, Halina’s decision to stop her practice of recycling could be interpreted as her way of protecting the cohesion of the group. Salas et al. (2015, p. 365) define cohesion as “the shared bond/ attraction that drives team members to stay together and to want to work together”. On the other hand, Carron (Carron & Brawley,

2012; Carron et al., 1998) suggests that cohesion refers to substantiality and unitedness among the members of a group in the pursuit of the group's instrumental objectives and/or for the members' satisfaction. In particular, the way Halina protects the cohesion of her family to some extent resembles Durkheim's (1893) concept of mechanical solidarity. Drawing upon Durkheim's writing on group cohesion and solidarity, Fenger (2012) interprets mechanical solidarity as solidary behaviour that is ruled by the traditional uniformity of collective values and beliefs, behaviours which are often practised without dispute. In this view, the maintenance of social stability becomes the highest priority.

Another explanation for Halina's situation may be that she possessed rather a weak internal locus of control. An individual who possesses a strong internal locus of control believes that they can govern the occurrence of situations in their lives on their own (Cleveland et al., 2005; Kalamas et al., 2014; Mittendorff et al., 2012). Consequently, she perceived recycling as an action that is to be conducted in a group, in particular with her family, although it supposedly could be performed on her own. Therefore, because she did not receive the social support that she sought, the intention to recycle remained in a prolonged stagnant period until she moved to Switzerland about 16 years later, which I will discuss in a later section.

Given that the stagnant period continued for several years, I concluded that Halina also experienced a regression back to the stage of pre-contemplation in the action of recycling. According to the description of the stages of change in the TTM (Prochaska et al., 1992), one is considered to be in the stage of contemplation when he/she has developed an intention to take action within the next six months. Therefore, although there was some progress in terms of the stages of change, these findings suggest that the ROEE failed to bring about the development of immediate environmental action by Halina.

In terms of behavioural change, the TTM only provides a framework for describing the process of moving up to the higher stages of change, but not the process of stagnation or moving down to the lower stages. From my extensive reading, I have not found any studies that discuss this limitation in the model since the model was first introduced by Prochaska and DiClemente in 1982. Therefore, in this research I sought an opportunity to contribute to this discourse by discussing processes that can lead to regression in behavioural change, particularly in environmental behavioural change. With regard to

Halina's situation, discouragement appeared to be the process that had caused her to experience stagnation and regression (or this was at least a contributory factor). The process of discouragement explains the situation in which Halina did not achieve what she intended to do and thought it was useless to keep trying.

It is important to note that the ROEE that Halina attended met one of the criteria for 'Brilliant Residentials': "integrating the residential learning with existing learning programmes" (see Kendall & Roger, 2015, p. x). It is suggested that this integrative approach can promote continuity of experience through making connections between non-formal and formal learning (Kendall & Roger, 2015). However, the fact that the ROEE was not successful in moving Halina to the stage of action challenges Kendall and Roger's (2015) criterion. According to Kendall and Roger (2015), an integration of existing learning programmes in school into residential learning would provide opportunities for students to engage in learning activities that are relevant to real life situations, but which could not be experienced nor replicated in formal education settings. In addition, having reviewed the literature on continuity of experience (see **Section 2.5**), it is reasonable to suggest that the relevance of knowledge of other contexts beyond the schools' walls, which are apart from the context within which the knowledge was acquired, is important. However, the impact of unfamiliarity, contrast, and the spatial approach adopted in the ROEE that Halina participated in, were greater than the impact of the relevance between the content of the ROEE with the existing curriculum. The course therefore failed to encourage her to sustain the change in her environmental behaviours.

When the relevance between the area of learning and ROEE is relatively obscure, unrealised, and unintegrated, Joplin's (1995) suggestion concerning the role of teachers and facilitators during an experiential learning course becomes relevant. In ROEE, teachers and/or facilitators should assist participants to make the connections and the environmentally-related goals of ROEE clear to participants. However, the disturbance to the continuity of Halina's experience did not occur within school, but within Halina's home context, where the attitude of her family represented the learning she experienced beyond the schools' walls context. These findings therefore support my argument in **Section 2.5** that the integration with existing learning programmes that is proposed by Kendall and Roger (2015) should not be limited to integration with formal education in school, but also with out-of-school contexts.

While discussing her environmental action as an adult, Halina reported another event in which she was in the stage of contemplation of the TTM. She implied that she was considering direct pro-environmental actions, which are more commonly performed in a group and through a substantial commitment and involvement in environmental organisations. Interestingly, these are the long-term results of her participation in the ROEE course:

There was one activity I wanted to do... There was someone that I know. She becomes involved in environmental activities quite a lot. For example, in the conservation of turtles, cleaning the corals in the sea. She's active as she works with an NGO. So, sometimes, as I looked at her pictures I felt like... I really want to try this, to get involved in such an activity, dedicatedly. I did have that thought, but I didn't get a chance...

In my view, the fact that she considered involvement in environmental organisations is a noteworthy achievement although it was only at the level of contemplation. This is because, in her account of her environmental actions before this event, she did not point out that she intended to involve herself in these actions.

However, as was previously the case, Halina indicated that the lack of social support had become the reason that her contemplation became stagnant – and had regressed, since the intention was not performed within six months (Prochaska et al., 1992).

It was about the network. I don't really know anyone who is involved in those kind of activities... So, these could be the hindrance factor. Maybe if it was my best friend or husband, or my family who are that involved, maybe it would be more enjoyable to do it.

Therefore, the lack of social support is a prevailing factor that stifled Halina's environmental behaviour change. More precisely, in the extract above, she indicated that the social support needed to be from those who had a close personal relationship with her, such as her family and close friends. A mere acquaintance might only have a minor impact on her environmental actions. Although an acquaintance had triggered her to consider involvement in an action, in order to progress further to the next stage of change, support from family and close friends was imperative. Crucially, this finding highlights the social influence of primary groups from others members in society. Cooley (1955, p. 15) describes primary groups as those who are "...characterised by intimate face-to-face

association and cooperation. They are primary in several senses, but chiefly in that they are fundamental in forming the social nature and ideals of the individuals". Based on Cooley's (1955) ideas, Halina's actions – environmental-related or not – are heavily mediated by her membership in these two primary groups: family and close friends.

The primary group is primary due to its influential power (Forsyth, 2014). While Cooley (1955) identifies face-to-face and affective relationships as the factors that link someone into a primary group, from Johnson and Johnson's (2009) and Parson's (1949) perspectives, families provide the basic functions of social order, such as the raising of children, provision of sustenance and shelter, and attribution of a particular social status to the individual—all of which can be considered as essential for survival of the individual. This is particularly the case during an individual's early life, until they are able to join other groups.

Litwak and Szelenyi (1969) also provide one possible reason for why Halina was influenced more by family (but not others), through a comparison between three types of primary groups, namely kinship ties (i.e. the relations between members of the nucleus family), neighbours and friends. According to Litwak and Szelenyi (1969), the social structure of kinship ties are more effective in influencing one's attitude and ability to handle different types of tasks due to the permanence of the kinship itself which is built through long-term ties. Considering Litwak and Szelenyi's (1969) position, I suggest that the primary group of the family tends to be more influential because they offer the assurance of longer-term social support.

The message from the findings above on the influences of primary groups is that the attitudes and acts of an individual are not always personal. Rather, an attitude and an act could be influenced by the social surroundings. Others' opinions and goals could be a reference to guide people in the construction of their own views (Cialdini et al., 1991; Glynn et al., 1995; Johnson & Johnson, 2009; Stets & Burke, 2000) – and consequently influence their actions. According to Mead (1934, p. 4) in his seminal writing on "the generalized other", this 'trading activity' of attitudes and acts is realised through "internalization of the conversation of significant gestures, as made possible by the individual's taking the attitudes of other individuals toward himself and toward what is being thought about". In other words, meaning can be modified through a conscious

reflection when the meaning is communicated with others (Wiley, 2003), or when the standpoints of others are compromised.

Halina's account of the influence of her social surroundings revealed how the social factors had become more profound in her later life experience. In the following section, and also other vignettes in this chapter, additional findings with regard to how environmental behaviour change can be influenced by other social factors in daily life, are provided.

#### **4.4.4 Halina's notable environmental behaviour change**

The experience of living abroad had a notable influence on Halina's environmental behaviour change throughout her life course. The progress of her environmental behaviour change was not only the extent to which she performed pro-environmental actions individually, which previously had proved difficult for her, but she also began exercising them routinely.

While living in Switzerland, Halina routinely recycled, which was the environmental action that she had considered when she was in Malaysia, particularly immediately after attending ROEE, but she was thwarted in her intentions and efforts and she regressed. Remarkably, the notable changes mostly occurred after she took part in the exploratory interview of this study. I was expecting that the exploratory interview might have encouraged Halina to think about pro-environmental action, as a result of her recollection of experiences during ROEE. However, Halina denied that this was the case. Instead, she emphasised the influence of her experience of living in Switzerland:

Since the last interview I would say the main environmental action that I have been doing is recycling... We [Halina and I] only met for few hours... My behaviour was not shaped by our meeting that day but more by my everyday life here [in Switzerland].

Exercising pro-environmental actions routinely also indicates that Halina has reached the stage of maintenance in the TTM, especially as the actions were overt for more than six months. Living in Switzerland for more than three years, Halina reached this stage by experiencing some processes of change. Of the 10 processes of change in the TTM by Prochaska et al. (1992), Halina experienced the process of consciousness raising, dramatic

relief and self-liberation. Consciousness raising was experienced as this was the factor that provided her with the necessary facilities and services, set an example of environmental behaviour, and gave her ideas of how to change her environmental behaviour. Consequently, she experienced dramatic relief as she was emotionally moved by the efforts of the Swiss. Self-liberation was evident as she decided to make a commitment to change. However, the process of dramatic relief that Halina experienced did not involve a sense of threat – a tactic commonly used in climate change films to change individuals' environmental behaviour. Based on Howell's (2012) study, one of the very few environmental studies that adopted the TTM, three out of four climate change films used the approach of dramatic relief by inviting a sense of empathy through the emotion of fear of the impact of environmental problems. This might stem from, for example, famous landmarks being destroyed, the impact of sea-level rise on millions of people, and the possibility of having to eat pets for survival.

The local policy and law enforcement influence of the Swiss government, together with their cultural norms and support from non-governmental organisations (NGOs), are among the key controlling factors that spurred her into this action. Below, I provide three extracts that indicate how Halina viewed the influence of these conditions on her environmental actions.

I think I have been shaped by the way of living in Switzerland. It has been more than three years now. I would say that by living here, it instils the feeling of love for the environment. We appreciate the cleanliness. The environment is so clean here. The attitude of the people here... the community here... The environmental education and awareness here are really prioritised.

One of the reasons is that it is costly to manage waste here [in Switzerland].

Here, once a month, there will be an NGO representative I assume, who would go house to house to collect papers, and used items such as shoes and clothes. They gave us the notice in advance so we'll have time to gather and place them in front of our house for them to collect.

In another extract, Halina implied that she had also gone through the processes of counterconditioning and stimulus control identified by Prochaska et al. (1992) in the TTM. Counterconditioning is a process in which individuals learn and acknowledge better alternatives for an action, while stimulus control is the process of removing any stimuli associated with negative behaviour and replacing it with prompts to engage in positive behaviours (Prochaska et al., 1992). These processes were evidenced as she reported that, while living in Switzerland, she could opt not to share the social practices of the local community. However, because she acknowledged that those practices by the Swiss were better, she decided to change her environmental behaviour. Although there were times when she was tempted not to follow the local norms, she still removed negative temptations:

Yes, we do have an option to simply throw them away, right? But sometimes I thought, since we have the facilities here to manage them properly so why don't we just use those facilities? Right? And one more, I respect the country. They are trying very hard to manage, to reduce all these kinds of disposable wastes... I feel sorry for those who have tried so hard. It is not right for us, the foreigners to come and not adapt to how people live here. We do know recycling is morally right.

The processes of counterconditioning and stimulus control that Halina experienced suggests that self-reflection through experiential learning had taken place. This reflects Allison and Pomeroy's (2000) notion that information may be easy to access through experiences, but what matters is how the information is evaluated through self-reflection.

On the specific influence of particular norms on Halina's environmental behaviour change, I referred to the theory of normative conduct by Cialdini, Kallgren and Reno (1991). According to these researchers, there are two domains of social norms that may affect human social behaviour: descriptive norms and injunctive norms. Descriptive norms describe the perception of what most people do, while injunctive norms refer to the perception of what people approve or disapprove of (Cialdini et al., 1991).

The influence of descriptive norms on Halina's behaviour was evidenced through her statement about her respect for the effort of the locals in caring about the environment. There was no clear evidence that Halina perceived the influence of injunctive norms on her environmental behaviour change, although it is reasonable to assume that she was

probably also surrounded by the Swiss who would have frowned upon her had she publicly displayed any anti-environmental behaviours. In addition, as Halina herself emphasised, the influence of social norms indicated that recycling was performed in order to deal with the new environment she was in.

Swiss culture also opened Halina's eyes to the possibilities of performing new environmental actions. In Switzerland, besides recycling, Halina also routinely used reusable shopping bags, reusable plates and cutlery, and opted to use public transport, although she indicated that she could afford to own a private vehicle.

These other actions were caused by the same processes that encouraged Halina to recycle, which are related to the concepts of consciousness raising, dramatic relief, self-liberation, counterconditioning and stimulus control that Prochaska et al. (1992) described in the TTM. The three extracts below point up Halina's perceptions of the other three pro-environmental actions that she performed in Switzerland:

The culture in Switzerland, when we had an event at the office, eating together at the office with supervisors and others, everyone comes along with their own mug. There was a time I bought plastic cups for everyone to use since I didn't bring any food to share, they were left unused. Everyone uses their own mug even for drinking alcohol. Then I realise we don't actually need plastic cups when our own mug can be used.

We never rented a car. The [public] transportation here is very reliable. Convenient. Very punctual and covers extensive areas... We can go everywhere. And now they have an app, in which we can refer to schedules. So, it is really reliable. It doesn't matter not to own a car although it is not that expensive to have a car here.

I always carry a shopping bag whenever I go out. I attach it to my handbag. If I don't do that, I might forget.

These extracts indicate how the experience of living abroad not only encouraged Halina to become more active in activities she had previously undertaken in Malaysia (e.g. recycling), but also that the types of the actions were diverse. The settings in which the pro-environmental actions were performed were not limited to formal settings or

organisations – the university where she studied, for example – but also within the settings that take place in daily life surroundings.

To learn more about Halina's environmental behaviour change, I compared the legislation and environmental norms in Switzerland and Malaysia. As a result, I found that Switzerland is far more advanced regarding environmental protection than Malaysia. Switzerland is ranked 7<sup>th</sup> on the 2005 Environmental Sustainability Index (ESI), while Malaysia ranked 38<sup>th</sup> (Esty, Levy, Srebotnjak & de Sherbinin, 2005). The ESI has been published annually by Yale University's Center for Environmental Law and Policy in collaboration with Columbia University's Center for International Earth Science Information Network (CIESIN) and the World Economic Forum since 2000. Its purpose is to indicate nations' ability to sustain favourable environmental conditions into the future through the measures of environmental, socioeconomic, and institutional indicators that characterize and influence the environmental sustainability of the countries (Esty et al., 2005; Schmiedeknecht, 2013).

With regard to waste management (since Halina emphasised recycling), the residents of Switzerland are bound by three ordinances that complement the Federal Environmental Protection Act of 1983 (EPA). These are ordinances that draw the regulatory regime for the issue of waste management and outline a series of rules and penalties for both private operators or businesses and also individuals who violate the rules (Froiep, 2015/16; Kaufmann-Hayoz & Mauch, 2001). However, I do not claim that it was the legislation that mainly shaped the environmental norms in Switzerland. Rather, there is the possibility that the legislation itself is a result of the demands and requests from the citizens. According to Sinha-Khetriwal, Kraeuchi and Schwaninger (2005), 62.6% of the citizens wanted the government to place more emphasis on environmental issues. Therefore, I would suggest that pro-environmental practices in Switzerland are very well established to the extent that they are also influential for others, even migrants such as Halina. In addition, due to the influence of the local law and policies, recycling is a compulsory action. This is especially so given the penalties for those who violate them.

In contrast, according to Agamuthu and Fauziah (2011), an appropriate policy is absent in Malaysia, thereby hindering the implementation of an integrated waste management system. Laws and policies that govern individuals in the issue of waste management are

still very new. The order to enforce citizens to segregate solid waste only began in September 2015, while enforcement through penalties only started in January 2016. In addition, the legislation only applied in seven out of 14 states in the country (Sinar Harian, 2015). Therefore, it is not surprising that public participation in recycling in Malaysia remains low. According to Agamuthu and Fauziah (2011), studies have indicated that fewer than 25% of Malaysians were participating in recycling, despite 70% of the citizenship being aware of the need to recycle

Therefore, I would suggest that the relationship between environmental behaviour, policies and social norms in Malaysia is markedly different from the situation in Switzerland. While the environmental policies and laws in Switzerland are the result of the Swiss voice and social norms, in Malaysia it is likely that the local policies and laws will determine their social norms, including their environmental behaviours. In fact, Halina herself did acknowledge these differences in the extract below:

Sadly, in Malaysia, I don't know why... It was not as rigorous as when I am here [in Switzerland]. I would only recycle waste when I am in a situation when I have to... For example, when I went back [to Malaysia] last time, we had house renovation. So, that was the time I gathered old steels and sent them to a recycling centre. Old magazines were also sent there in exchange for money... It was not our culture in Malaysia to recycle. It is different when living overseas.

It was as a result of these differences between the two countries that Halina's recycling practice regressed when she returned to Malaysia for a three month break. Because of this I concluded that Halina had not yet reach the level of termination – the stage in which one is not tempted to regress and there is 100% confidence (introduced later by Prochaska and Velicer (1997) in the TTM) that Halina would not be affected by any temptation. The social environment in Malaysia tempted her to move from the stage of maintenance to the stage of action in the TTM. In addition, these findings also provide evidence that actions that are under the influence of social norms are highly vulnerable. The exercise of such actions may fluctuate significantly as a result of changes in the social environment.

The difference in Halina's behaviour in the two countries suggests that one may change his/her primary group depending on time or place. The impact of the new primary group in shaping behaviour could have as much impact as the original primary group. This finding concurs with Beames' (2005) and Colt's (2017) studies. Influenced by Cooley's seminal

work on primary groups and Mead's (1934) concept of 'the generalized other', Beames' (2005) study of the social construction of the self among the participants of an expedition abroad suggests that as the participants were far away from their primary group of friends and family, the participants formed another group – the other participants of the expedition – as their primary group (Beames, 2005). These findings concurred with those of Telford (2010). Beames (2005) suggests that people's identities are shaped by their primary groups – even if novel, temporary and in another setting (or country). Colt's (2017) study was not conducted within the context of outdoor environmental research. Framed by one of the concepts adopted by Beames (2005) – the concept of 'the generalized other' (Mead, 1934), Colt (2017) analysed the departure and return of an immigrant from and to his homeland. One of the study's findings was that the immigrant had experienced some conflict with regard to his ethnicity and his cultural heritage that were different at different life stages. This conflict of identity, Colt argued, could have been the result of the immigrant having been surrounded by different people at different times – essentially conflicting 'generalized others'. In the current study, this may well be the case in Halina's life story. While her family was her primary group when she was in Malaysia, her primary group in Switzerland was different. Certain groups within the Swiss society, for example her colleagues, close friends or neighbours, had in effect become her primary group.

Analysis further highlighted the important influence of legislation in each of the two countries. Enforcement through law and policies is not directly proportional to the availability of facilities and services for caring about the environment:

In Malaysia, the routine of waste collection is carried out two to three times a week. Compared to Switzerland, it is done only once a week. So, we have to properly dispose of [for example] food waste such as chicken bones... We need to properly wrap them to curb the foul smell.

In this extract, it seems that Halina believed that the waste collection services in Malaysia were better than those in Switzerland, and this unwittingly led her to treat the matter lightly when she was in Malaysia.

In Malaysia, she only practised recycling occasionally – for example, on an occasion where the size or the amount of the waste was substantial – whereas, when in Switzerland, the influence of size and the amount of waste was not the main concern:

[In Switzerland] the coffee capsules are very tiny aren't they? I could have just throw them away. But, the excitement is there when I am able to collect a bag full of coffee capsules to be returned to Nespresso to be recycled. I didn't get any profit.

This finding suggests that the availability of facilities and services was not a big concern for Halina in practising recycling; or, perhaps, policies and laws in Malaysia may not be absent, as Agamuthu and Fauziah (2011) suggest, but rather are more present and enforced to industries than they are to individuals. Therefore, while recycling facilities are legally required for industrial purposes, recycling remaining an optional action for individual members of the public.

The fact that the statistics provided by Agamuthu and Fauziah (2011) indicate that public participation in recycling in Malaysia is low, despite the availability of facilities and services, suggests that social norms discourage action, in contrast to Switzerland where their social norms encourage action. Therefore, it was not surprising that Halina experienced a regression when she returned to Malaysia, since the evidence from previous events indicated that social norms were a big influence on her environmental behaviour.

Having discussed these findings, it is worth noting that laws and policies, and also social norms, appear to be the key to promoting pro-environmental behaviour. However, several authors (e.g. Drengson et al., 2011; Naess, 2015) consider laws and policies as shallow ecology approaches which aim for quick technical solutions. A shallow ecology approach involves narrow questioning about the biospherical egalitarian and symbiotic relationship between nature and humanity (Drengson, 2008). However, Halina perceived that these 'shallow ecological' factors had had a significant influence on her environmental behaviour change. According to Naess (2015), a shallow ecology approach is powerful in getting people's attention and encouraging them to react accordingly to achieve the targeted practical solutions within a short time.

#### **4.4.5 Summary of Halina's vignette**

Overall, Halina's practice in pro-environmental actions fluctuated throughout her life course. The ROEE course that Halina attended when she was in primary school was not a notable factor in her environmental behavioural change, although the ROEE met two of

the 'Brilliant Residentials' criteria which are 'providing new and memorable experience' and 'embedded within the existing curriculum'. The ROEE offered an opportunity for Halina to experience an appropriate process of change (i.e. environmental re-evaluation), according to her current stage of change at that time (i.e. the stage of pre-contemplation). However, her subsequent life experiences had caused stagnation and regression in her progress towards changing her environmental behaviour. The stagnation and regression were the result of the failure of subsequent events to make her perceive or experience processes that Halina required in order to progress.

When analysing Halina's life events, it appeared that her experience of living in Switzerland was the most notable factor. Social norms were central to the changes in Halina's environmental behaviour. The analysis that I have provided compares the impact of social norms and other possible factors – i.e. policies and laws – and continues to point toward social norms, particularly descriptive social norms, as the most powerful influence on Halina's environmental behaviour. This finding was notable, especially when comparisons were made between Halina's behaviour in Malaysia and Switzerland, and taking into consideration the different policies, laws and availability of facilities in the two countries.

The effect of social norms not only explains the process of progression but also regression. They became the factor that had encouraged the notable change when she immigrated to Switzerland, but it was also the factor that constrained her attempts to change in several previous events.

The influence social norms had was the extent to which they restricted Halina's opportunities to conduct environmental actions in various dimensions. For example, recycling is not necessarily a group activity but can be conducted individually. Due to this factor her intention to involve herself in environmental action through involvement with an organisation was also stagnant. Because of social norms, Halina experienced a notable change in her environmental behaviour to the extent that some actions were routinely exercised in Switzerland.

The findings presented in this vignette also suggest that regression may occur in the future when Halina returns again to Malaysia. Considering the new Malaysian policy and laws for

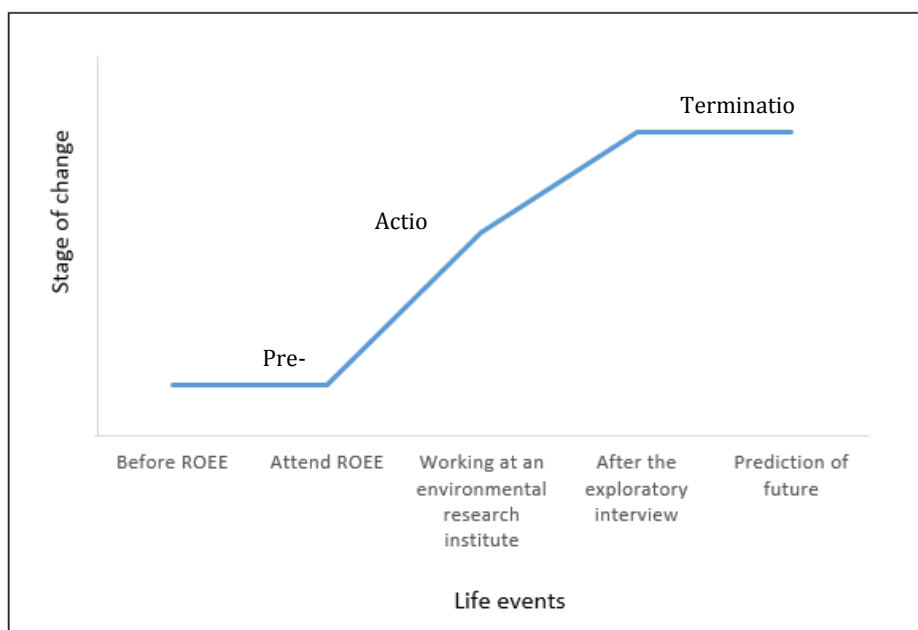
recycling that were enacted in September 2015, the regression may not be as notable as when she returned to Malaysia previously. However, recycling is not the only pro-environmental action that one can perform. Therefore, perhaps, if the fabric of Malaysian society were to provide a culture in which pro-environmental action was the norm, she would also be able to maintain her practice of other pro-environmental actions. Otherwise, those who are very dependent on social support and the cultural norms that they are surrounded with, like Halina, would always practise pro-environmental actions inconsistently.

There were several processes of the TTM offered by social norms in influencing Halina to improve her environmental behaviour. They were consciousness raising, dramatic relief, self-liberation, counterconditioning and stimulus control. However, the TTM only provides a framework for describing the processes of moving up to the higher stages of change, but not the processes of moving down to the lower stages. This is one limitation of the TTM and is an area where I can make my own contribution. Based on Halina's vignette, I suggest that discouragement is one of the processes that may cause stagnation and regression.

In addition, this vignette of a 'relapser' suggests that disturbance in developing continuity of experience may be temporary. Although Halina encountered several challenges that had caused stagnation and regression, her pro-environmental behaviours resurfaced when she encountered supportive events or environments again.

#### **4.5 Vignette of Borhan: A 'Maintainer'**

The vignette of Borhan is presented to examine his experience of going through environmental behaviour change in a manner that is less obtrusive. Out of the nine participants studied, Borhan was the only participant whose journey reflected this pattern of change. The events in his life, which brought about these changes in his environmental behaviour, are depicted in **Figure 4.3** below.



**Figure 4.3** Borhan’s progress of environmental behaviour change throughout his life course

In the paragraphs that follow, I outline his life experiences related to environmental behaviour change chronologically, beginning with his environmental behaviour before he attended the ROEE course until he notably changed his behaviour when he worked as a social researcher at an environmental institute.

#### 4.5.1 Before ROEE

Borhan attended an ROEE course when he was 17 years old. Although he was almost an adult, Borhan did not indicate whether he had ever involved himself in any pro-environmental actions before attending ROEE. According to him, “previously [before attending the ROEE course], I simply littered. I didn’t separate the waste according to the three categories”.

This rather short response indicates that Borhan was in the stage of pre-contemplation in the TTM as his situation during this phase of life (before ROEE) matched the description of this stage by Prochaska et al. (1992), which states that pre-contemplation is the stage where there is no intention to change behaviour in the foreseeable future. In addition, he also matched the description of the pre-contemplation stage described by Xiao et al.

(2004b) in their study on a consumer education programme, where they labelled their respondents who were not aware that a problem existed, or that a change should be made in their lives, to be in the pre-contemplation stage. The fact that Borhan caused a problem to the environment in the way that he was littering indicated that he might not have been aware that he should change his behaviour.

#### **4.5.2 Participation in ROEE**

The ROEE course that Borhan attended was organised by the Department of the Environment, Ministry of Natural Resources and Environment. He was chosen to attend the course by his teacher on the basis of his membership of the Student Disciplinary Council of his school. In his own words, “my teacher selected the participants... Because I was a member of the Student Disciplinary Council”. From this extract, it is noteworthy that Borhan’s participation in the course was not voluntary. In this vignette, how he changed after he joined this course is examined.

#### **4.5.3 Prelude to Borhan’s notable environmental behaviour change**

Since attending the ROEE course and until he participated in the main study interview of the current research, Borhan experienced environmental behaviour change over time in a less obstructive manner, and he moved to a higher stage of change as the result of several events until he finally achieved the level of termination that is the final stage of change in the TTM. Working in an environmental institute was identified as the event that caused him to reach this stage. The accounts of why I considered Borhan had achieved the stage of termination, and the details of how he achieved that stage, are presented in the next section (**Borhan’s notable environmental behaviour change**). In this section, I discuss Borhan’s environmental behaviour within his life journey before he entered that phase of life.

Upon the completion of the course, he performed two pro-environmental actions: recycling and participating in another environmental programme. With regard to this pro-environmental action, according to Borhan, “after returning [from the ROEE course], I began to separate the waste. I did it with friends... as we know we can sell them and make

money out of it". In addition, based on this response, it is notable that there were two factors that influenced Borhan's decision to recycle: the people involved, and the reasons he performed the pro-environmental action.

In the vignette of Halina, I have already discussed the possible reasons why one would prefer to perform an environmental action in a group rather than individually using the concept of the primary group – the primary group consists of the people that are primary and fundamental in forming an individual's social nature (Cooley, 1955; Forsyth, 2014). However, while Halina defined her primary group as her family and close friends, it is interesting that Borhan defined his primary group differently: solely as his close friends.

With regard to the improvement in Borhan's environmental behaviour, his motivation for recycling deserves attention. He recycled for the purpose of financial gain which reflects the concept of egoistic value orientation – which is one of the tripartite classification of reasons for performing pro-environmental actions, besides biospheric and altruistic. Egoistic value orientation is concerned with the well-being of the self or the inner circles; biospheric value orientation is concerned with perceived costs and benefits for the ecosystem; and altruistic value orientation is concerned with perceived costs and benefits for other people or a human group (de Groot & Steg, 2008; Lee, 2011; Schultz, 2001; Stern, 2000). According to Schultz (2001) and Stern (2000), egoistic value orientation can be in terms of health, lifestyle and future of self. However, Borhan's monetary motivation fits better with the result of the studies by Ojea and Loureiro (2007), Stern and Dietz (1994) and Stern, Dietz and Kalof (1993), which suggest that egoistic considerations are commonly associated with monetary or material factors that also usually play a more crucial role in encouraging pro-environmental actions.

Some authors, discussed egoistic and altruistic value orientations together by using the term anthropocentric (e.g. Amérigo et al., 2007; Kopnina, 2014; Ojea & Loureiro, 2007). The ethic of anthropocentric is grounded in society and implies that the social good should be maximized and human evil minimized (de Groot & Steg, 2008). According to Naess (2015), anthropocentrism as an approach to developing environmental behaviour is more powerful than a biospheric approach in turning people's attention to practising behaviours that sought solutions for environmental problems. Numerous empirical studies have provided evidence to support this claim (e.g. Fritsche & Häfner, 2012; de Groot &

Steg, 2008; Howell, 2012; Nordlund & Garvill, 2003), and there are also studies that indicate otherwise (e.g. Casey & Scott, 2006). Anthropocentric individuals are utilitarian in character, and they would be less likely to protect the environment if other human-centred values such as material quality of life were challenged (Nordlund & Garvill, 2003). Therefore, they also tend to be concerned only with environmental issues that are considered inequitable in terms of both causes and outcomes (Howell, 2012). On the other hand, with regard to the biospheric value orientation, a study by Casey and Scott (2006) found that it was older people who showed more biospheric concern than younger people as they were less materialistic and less concerned with the possible negative financial consequences of having a relatively high level of environmental concern. Findings from the current study suggest that Borhan's environmental behaviour change was influenced by monetary motivation which reflects Casey and Scott's (2006) definition. Perhaps Borhan's motivation to start recycling after ROEE was also the result of his young age at that time – it is the nature of younger people to become more attracted to financial gain.

In addition, the finding regarding the influence of monetary motivation was interesting in comparison with the many theories and models of environmental behaviour that are presented in **Chapter 2**. Most of the early theories and models of environmental behaviour – for example the theory of responsible environmental behaviour (Hines et al., 1987) and the norm activation model (Schwartz, 1977) – outline the process for developing pro-environmental action from the perspective of ecologists and environmentalists: the perspective that favours biospheric values in environmental behaviour change (Stern & Dietz, 1994). Nevertheless, the later environmental behaviour theories, such as the various dimensions of environmental action-related knowledge (Frick et al., 2004; Jensen, 2002) and the revised model of responsible environmental behaviour (Bamber & Möser, 2007) also still focus on the biospheric value orientation, despite the fact that the tripartite classification of motivation (i.e. egoistic, biospheric and altruistic) has been discussed since the early 1990s by, for example, Stern et al. (1993) and Stern and Dietz (1994).

Interestingly, the monetary motivation that Borhan perceived was directly taught during the ROEE course:

They briefed us. They told about how much money we could get [from selling the waste to recycling centre]. So, from there we know the different values of newspapers, white papers, and coloured papers.

From one perspective, my analysis suggests that perhaps it was the strategy of the organiser to produce instant outcomes in encouraging the participants to practise pro-environmental actions by tempting them with the personal benefits that are offered by an egoistic value orientation. As Casey and Scott (2006) suggest, younger people have a tendency to lean more towards an anthropocentric value orientation. However, anthropocentric-oriented education in the literature on deep ecology (e.g. Drengson, 2008; Jacob, 1994; Kober, 2013; Naess, 1986; 2015) has also been considered to be a shallow approach for bringing about lasting environmental behaviour change.

Although Naess (2015) and the findings in the previous vignette indicate that a shallow ecology approach – through laws and policies – is powerful for encouraging people to change their behaviour, based on additional analysis the anthropocentric approach that was adopted during the ROEE course that Borhan attended can be viewed as inappropriate. There was a danger that the participants might misinterpret the lesson in a way that gave them ideas about how they could manipulate the environment for their own benefit. The studies by Hansla et al. (2008) and Joireman et al. (2001) discuss this idea. According to Hansla et al. (2008, p. 5), “environmental concern for self, others, and the biosphere were related to awareness-of-consequences beliefs for oneself, others, and the biosphere, respectively”. If someone perceives learning based primarily on concern for themselves, there is a possibility that subsequent future consequences are also for their own benefit (Joireman et al., 2001). In the current study, the future consequences refer to the subsequent environmental actions. Therefore, my analysis supports Gadotti’s (2010) account of the need to reorient education towards sustainable development. This finding suggests that ROEE should be oriented towards biospheric sustainable education and should avoid adopting an anthropocentric approach.

Regardless of whether it was deliberate or not, from the perspective of the TTM, I deemed that this situation was comparable to the process of consciousness-raising and the process of self-re-evaluation. The former refers to learning new facts, ideas and tips that support the behavioural change, while the latter is the process in which individuals assess how they feel and think about themselves with respect to their current behaviour (Prochaska et

al., 1992). These two processes were evidenced by the fact that Borhan learned to start recycling as a result of the ROEE despite the fact that his motive was to generate money through the action. In addition, given that Borhan was in the stage of pre-contemplation before he attended the ROEE, the fact that the ROEE provided him with the opportunities to go through the process of consciousness-raising was appropriate. In the TTM, the process of consciousness-raising suggests that people should be able to move from the stage of pre-contemplation to contemplation – i.e. in which they intend to take action within the next six months (Prochaska et al., 1992). However, the process of self-re-evaluation was an additional benefit offered by the ROEE. Self-re-evaluation is a process of change which helps people to move from the stage of contemplation to preparation – i.e. the stage in which they have become more equipped to take action (Prochaska et al., 1992). Thus, Borhan was able to progress further in changing his environmental behaviour. However, it is interesting to note that these two processes allowed him to progress to the stage of taking action, and perhaps to the stage of maintenance, had the action been overt for more than 6 months. According to Prochaska and Velicer (1997), one can be considered to be in the stage of maintenance if one practises a particular behaviour for more than six months.

Participation in another environmental programme was the second pro-environmental action that Borhan performed as the result of his participation in the ROEE course. While his participation in the ROEE course was attributed to his teacher, Borhan participated in a tree planting programme on his own volition as he became interested in the environment. More interestingly, his interest in the environment developed due to his concern for the environment, which suggests a biospheric orientation. He explained that “after the camp, there was a tree planting programme... I joined the programme voluntarily... [Because] during the programme, I learnt the benefits of the environment”. This finding suggests that Casey and Scott’s (2006) theory concerning the relationship between age and the likelihood of value of orientation (whether pro-environmental action performed is biospheric, altruistic or egoistic oriented) is not necessarily accurate. Although Borhan was young while attending ROEE, the findings suggest that he perceived both egoistic and biospheric value orientations at the same time. The difference was that he applied the two values in different situations to perform pro-environmental actions.

Reflecting the TTM processes described by Xiao et al. (2004b), Borhan's participation in this environmental programme indicates that his motivation was driven by the TTM's process of social liberation and helping relationships. According to Xiao et al. (2004b), the process of social liberation can be considered to have occurred when one realises that the provision of a voluntary social programme encourages better behaviour. On the other hand, a helping relationship is the process in which one seeks or uses social support for encouraging positive behaviour change (Prochaska et al., 1992). These two processes were depicted in the situation in which Borhan took the opportunity to engage in a pro-environmental action that was provided within the proximity of his social community.

These two processes of change are described in the TTM as processes that have the ability to allow us to reach the higher stages of change – i.e. the stage of maintenance and termination. The stage of termination is defined as the stage in which one is not tempted to relapse (Prochaska & Velicer, 1997). It is a sign that we are not affected by any temptations, which Prochaska et al. (1994) define as the salience of cues that urge one to engage in a problematic behaviour – such as those that are contrary to pro-environmental behaviour. Therefore, my analysis suggests that the process of social liberation and helping relationships that Borhan experienced after he began to practise recycling resonated with the literature. The findings demonstrate that he was able to continue changing his environmental behaviour because the subsequent experiences provided opportunities for him to move through processes of change that suited his current stage of behaviour. This analysis further suggests that because of this steady progress, Borhan was able to maintain his commitment to practising pro-environmental actions until he enrolled into a local university. The interest in the environment that he developed from the ROEE course subsequently influenced his decision to pursue his studies in the field of Geology, which I believe was also the starting point that determined his career in the environmental field. In his words, “in terms of long-term effects, I became interested in the environment. That's why I decided to study Geology [in university]”.

This finding suggests the possibility of different effects of biospheric values in comparison to egoistic values that were evident from the ROEE course. In an earlier paragraph, I presented the finding that suggests egoistic values could be the ROEE organisers' strategy to produce instant outcomes by encouraging the participants to practise pro-environmental actions. Nevertheless, the outcome was rather straightforward and

understandable. The action of recycling was performed by Borhan due to what he was taught in respect of that particular action. In fact, however, it was a biospheric value orientation which inspired Borhan to perform various forms of subsequent pro-environmental action: involvement in other environmental activities and choosing an area of study and career that are related to the environment.

In addition, his decision to study and pursue his career indicates the long-term effects of biospheric values. This reflects Schultz, Shriver, Tabanico and Khazian's (2004) question of whether biospheric-oriented educational activities that promote a connection with nature will have longer lasting effects. Higgins (2006; 2009) believes that 'connection' is the basis of a robust and durable relationship that would influence a person's perception of the consequences of their actions. However, Higgins (2009) indicates that the context of 'connection' may range from the connection of oneself to a place or the planet and the community where he/she lives. Influenced by this notion, my analysis suggests that the robust and durable consequences that Higgins (2006; 2009) suggests can be formed through 'connection', may emulate one another. If the connection is formed with nature, perhaps the robust and durable consequences of actions that are formed would also be nature or biospheric-oriented.

#### **4.5.4 Borhan's notable environmental behaviour change**

I have defined the concept of the stage of maintenance and termination in **Section 2.7.1** and in the previous section. Drawing on the definitions of these two stages of change, it is reasonable to suggest that Borhan had reached the final stage of change outlined in the TTM because there were a number of pro-environmental actions that he had been performing for many years before he participated in the exploratory interview in this research. In addition, while it is possible that he had experienced a variety of temptations throughout his life course, Borhan did not report any events that indicated he had experienced a regression. But, of course it is also possible that he was able to achieve this stage of change because he never faced any temptation.

Borhan's environmental behaviour changed notably when he started working at the environmental institute of a university. Since then, he has been consistently involved in

various pro-environmental activities, even after participating in the exploratory interview of the current study. In addition, as a result of the influence of his career, he is currently pursuing his study at master's degree level in the field of environmental education. The extracts below point out two examples of pro-environmental actions that Borhan performed through his affiliation with the environmental institute:

I went to Melbourne last year to study on the cycling culture. Returning to Malaysia, I decided to propose similar bicycle parking facilities [to promote cycling culture]. So now, I'm looking for sponsors.

In 2015, there were three [ROEE] programmes organised by CENFED (pseudonym of the environmental institute where he works at), in collaboration with Bank RYT (pseudonym). The first programme involved school teachers. The second involved secondary school students. The third involved primary school students.

The environmental actions that Borhan performed were in the form of research projects and also provision of environmental education to others. Clearly these actions resulted in the involvement of other people (e.g. his colleagues, co-organisers and learners), and have the potential to facilitate their environmental behaviour change. This finding was unsurprising. Based on my research on the institute's website I found that it is the goal of the institute to conduct activities for achieving the goal of sustainable development through research and capacity development. Therefore, I reasoned that it is very likely that the nature of Borhan's career is bound to facilitate his environmental behaviour change, which echoed Hounsell's (1984, p. 131) thinking that "a profession is not practised or pursued in vacuo, but within a specific context or setting. And whether this setting is institutional, industrial or commercial, it invests everyday professional practice with a distinctive character". Since the social context of the institution where Borhan works is significantly related to environmental conservation, he was provided with significant opportunities to perform pro-environmental actions within his profession. The institution set the group goals that guided the planned and coordinated actions of their employers (Johnson & Johnson, 2009).

Further analysis suggests that the influence of the affiliation is comparable to the influence of social norms. However, compared with Halina, the norms that influenced Borhan's environmental behaviour change are bound to a lesser extent by the social

environment. With reference to the theory of normative conduct discussed by Cialdini et al. (1991), it is likely that there was an important role for injunctive norms in Borhan's circumstances, whereby injunctive norms are described as the norms that have been developed based on perceptions of what people approve or disapprove of:

All the CENFED (pseudonym of the environmental institute where he works at) staff have been reminded that as an environmental institute, we should set examples in order for the rest of the university community to follow suit.

Borhan's response above highlights the role played by the management at his workplace which impacted on his environmental behaviour, and which can be viewed as the influence of legitimate power. Legitimate power, according to Forsyth (2014, p. 252), "[has] the socially sanctioned right to ask others to obey their orders". Once again, this finding reflects Hounsell's (1984) account of how different styles of management or leadership in a company, partnership, organisation or educational institution will govern the relationships between employees and determine the processes of decision-making of the employees. Specifically, the elements of the management or leadership that can produce these outcomes are the sets of aims and goals, underpinned by specific bodies of assumptions and values, and a pattern of assigned commitments, responsibilities and financial allocation (Hounsell, 1984). The findings of the current study suggest that, through the power of authority, the management of Borhan's institution may have influenced him in such a way that he felt compelled to adhere to their codes and values, which reflected their views on acceptable and unacceptable behaviours.

While Naess (2015) suggests that laws and policies are shallow ecology approaches, one may also consider the use of legitimate power to be shallow. However, Forsyth (2014), in his account of social groups, challenges this view. According to Forsyth (2014), legitimate power does not have the coercive element which characterises laws and policies – obedience to legitimate power is voluntary. When the members of the group choose to take part in achieving group goals, it is either because the members have personally accepted them and/or have internalised a sense of loyalty to the group (Forsyth, 2014). Building on this, my analysis suggests that Borhan could have left the group had he been unhappy with the group's goals, or if the goals had challenged his beliefs. Legitimate power itself – with regard to the power within a professional organisation – is brittle. For

example, if the person from a superior position acts in a way that may cause harm or does not properly respect his/her subordinates, it is possible that he/she will be dismissed from the group (Forsyth, 2014). Therefore, my analysis suggests that using legitimate power may not be a shallow ecology approach. What it is important to understand is the group member's motivation to attempt to compel others to comply with the group goals – and whether this is justified through shallow or deep questionings. Shallow questioning involves narrow reflections on the biospherical egalitarian and symbiotic relationship between nature and humanity (Drengson, 2008). Deep questioning, in contrast, involves reflections on the mainstream values and one's personal values, beliefs and practices, by considering the fundamental relationship between nature and humanity before they arrive at decisions regarding which actions can be deemed acceptable and unacceptable (Drengson, 2008; Drengson et al., 2011; Naess, 1986; 2015).

The way in which Borhan identified these acceptable and unacceptable behaviours indicates that he went through the TTM process of counterconditioning and consciousness raising. Prochaska et al. (1992) define counterconditioning as the process in which individuals acknowledge that a particular behaviour is a better alternative than another. However, based on my critical analysis of the influence of an affiliation, it appears that it is possible for one to experience the process of counterconditioning without careful and thoughtful consideration of the true merits of the concept. The behavioural change may be accounted for without self-reflection if it is directed by the norms that have been developed based on perceptions of what people approve or disapprove of (injunctive norms), which he/she has felt compelled to obey. This finding led to the conclusion that the process of counterconditioning is not necessarily self-driven, although the change is intentional.

In terms of durability, Petty and Cacioppo (1986) contend that such influence requires one to scrutinise the true merits of the information presented and consider whether it is less enduring. Borhan, however, committed to pro-environmental actions not only for an extended period of time but also in such a way that it involved different social groups. The influence of the affiliation convinced him to continue practising recycling at home with his family, and he explained that “now, my primary concern is the environment, while profit making comes second... and I preach this to my kids”. It is notable that the influence of social norms in his workplace was brought into his private life, namely into a social

environment where he was not subjected to pressure from any power or authority. This finding suggests that, although the social norms that influenced Borhan's environmental change occurred within his workplace, the impact also had the ability to cross social boundaries. Moreover, influenced both by the nature of his work and by the insistence of the management of the institution, according to Borhan his motivation to recycle had been different from the motivation that led him to recycle with his friends during his school days. The monetary motivation has become a concern about the environment. In other words, if using the terms used by de Groot and Steg (2008), Lee (2011), Schultz (2001) and Stern (2000), Borhan's affiliation with the environmental institute had changed him in such a way that the pro-environmental action that he performed was no longer egoistically orientated, but biospherically oriented.

These two events – Borhan's decision to study Geology and his continuing practice of recycling since joining the environmental institute – demonstrate the ability of the biospheric value orientation to maintain its effect on environmental behaviour change for extended periods of time. However, based on Borhan's experience, it was difficult to draw conclusions with regard to the durability of egoistic-oriented actions. One possible reason for this is that the biospheric value orientation replaced the egoistic value orientation as a trigger midway through Borhan's environmental behaviour change. If Borhan had not received the pressure from the environmental institute, it might have been possible within the current study to discover how long an egoistic-oriented action may last. Notwithstanding this observation, these findings concur with Dewey's (1938) concept of the continuum of experience, as findings presented in this vignette suggest that a continuum of experience would foster a more durable pattern of pro-environmental actions.

In addition, Borhan's continuing practice of recycling suggests that his action of recycling has become a habit. The term 'habit' describes a pattern of behaviour that has been successfully performed and in stable circumstances over an extended period of time (Friedrichsmeier, Matthies & Klöckner, 2013; Klöckner & Blöbaum, 2010). This definition is similar to the TTM's concept of the stage of termination – the stage in which one is not tempted to relapse. It has been noted that monetary motivation was the trigger for Borhan to form the habit. However, the fact that this behaviour continued until when he was participating in the main study interview of the present research suggests that the

initial monetary motivation was a notable element in determining his subsequent behaviour. In addition, once a habit is formed, the need for the influence of intentions and deliberate decision-making decreases (Friedrichsmeier et al., 2013; Jackson, 2005). This supports the argument above about how one may change his/her environmental behaviour through a simple trigger without self-reflection.

In addition to his employment, Borhan also attributed the change in his motivation to perform pro-environmental actions to the processes of dramatic relief and environmental re-evaluation. He became aware of these two processes having witnessed natural disasters that often occur in Malaysia. Dramatic relief involves an emotional reaction to the possible consequences of current behaviour (Prochaska et al., 1992). On the other hand, environmental re-evaluation is the process by which someone comes to realise how their action affects their proximal social and/or physical environment (Prochaska et al., 1992):

Nowadays, we experienced tsunami, right? In the 1990s, we were told of tsunami and hurricane, but find no significance. Tsunami appeared only in the year 2000 onwards. Only now tsunami is evident... theory is not sufficient for us to visualise the [environmental] condition.

As was the case in the films analysed in Howell's (2012) study, the local disasters that happened created for him a sense of threat. The disasters provided clear and unequivocal evidence for him that it is important to be considering or worrying about the need to care about the environment. Therefore, although he did not experience the disasters directly, the events had a profound impact on Borhan.

His affiliation with the environmental institute, together with a concern for the environment that arose from the process of dramatic relief, once again enabled Borhan to apply what he had learned from the ROEE course that he had attended in school, but through reflection from a different perspective. Based on his own experience, he was inspired to consider how to improve the approach in ROEE, especially those courses that were organised by the organisation where he works. According to him, providing evidence of consequences is important, but this was lacking in the ROEE course that he had attended in school. He explained, "when we deliver talks and teach people, we need to provide evidence". This emphasis on the need for evidence appeared to be challenging the

opinion that knowledge about effects or system knowledge is important, proposed by Jensen (2002; 2004) and Frick et al. (2004). This kind of knowledge addresses the existence and spread of environmental problems (Jensen, 2002; 2004). Thus, the findings suggest that mere knowledge about environmental problems is inadequate. Instead, in order to develop a genuine concern about the environment, one needs to be provided with clear evidence of the consequences.

#### **4.5.5 Summary of Borhan's vignette**

Participation in the ROEE course was a key factor that initiated Borhan's environmental behaviour change. In comparison with the previous vignette, Halina attended ROEE in primary school (12 years-old), while Borhan was in secondary school (17 years-old). One may argue that the difference in their age and maturity might be the factors that distinguished between the outcomes of the courses. However, critical analysis of the findings of the two vignettes did not provide evidence for this assumption, although it remains a possibility. Instead, the factor that led to this difference appears more likely to be attributed to the content of the course. Compared to Halina, Borhan was explicitly encouraged to change his environmental behaviour during the ROEE course that he attended. Consequently, he began to make changes through small actions, such as recycling, and he joined a tree planting programme. His first action was shallow and egoistic-oriented, which is less favoured from the perspective of ecologists and environmentalists who prefer biospheric value orientations (Stern & Dietz, 1994) and in the literature of deep ecology (e.g. Drengson, 2008; Jacob, 1994; Kober, 2013; Naess, 1986; 2015), but nevertheless, the action became concrete because it was performed continuously up to the time in which he participated in the main study interview of the current study. With regard to this situation, Borhan progressed to a higher stage of change by moving through the processes of consciousness raising, self-re-evaluation, social liberation and helping relationship within the TTM. According to the TTM, the processes that Borhan experienced through the ROEE allowed him to progress gradually from the stage of pre-contemplation to the stage of action. In addition, the findings suggest that there was also the influence of peer pressure, as well as the subsequent experience of his employment, which marked further notable change in Borhan's environmental behaviour.

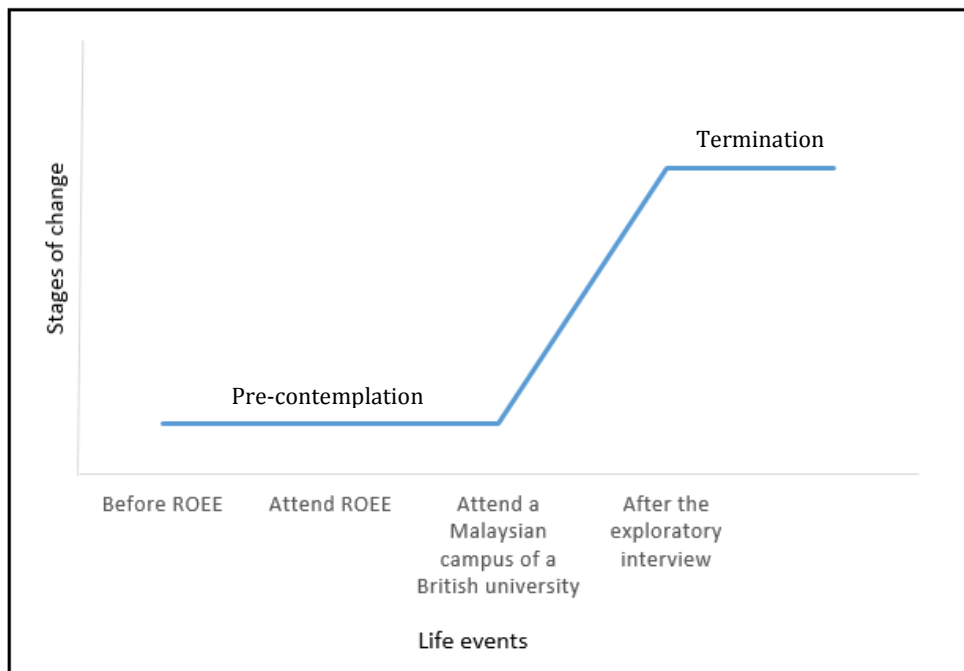
Driven by his employment at an environmental institute, Borhan involved himself in environmental research, organising environmental education programmes, and he encouraged his family to recycle. He claimed that the motivation to practise pro-environmental actions was due to his concern about the environment, which reflects a biospheric value orientation. His motivation to recycle also shifted from egoistic to biospheric oriented. Because he had been employed in the environmental institute for some time, Borhan reached the stage of termination in the TTM for the pro-environmental actions that he was practising, without any evidence of regression. The findings suggest that either he did not face any temptation, or that he had removed all the temptations that could cause his environmental behaviour change to regress. During this phase of his life, the main influences that changed Borhan's environmental behaviour were social norms, which are linked to three processes in the TTM: consciousness raising, environmental re-evaluation and counterconditioning. He embraced the social norms of the organisation – i.e. the norms that were developed based on perceptions of what people approve or disapprove of (Cialdini et al., 1991). Since the organisation's aspiration is biospherically oriented, Borhan also was encouraged to practise pro-environmental actions for biospheric purposes. In addition, the research that he conducted, and the environmental education programmes that he organised, involved groups of people and could also encourage their environmental behaviour change.

The findings in this vignette also suggest that, although the social norms that influenced Borhan's environmental change resulted from his employment, they also influenced his environmental actions within his private life. This suggestion was drawn from the findings of the impact of the social norms on Borhan's decision to practise recycling at home. This finding indicates that the influence of social norms is not necessarily limited within the boundary of the social environment in which the norms were created. It is possible for the influence of the social norms to influence a different context or social environment.

#### **4.6 Vignette of Raju: A 'Transcender'**

The vignette of Raju was of particular interest because, of all the research participants, he experienced the sharpest environmental behaviour change. As shown in **Table 4.1** and **Figure 4.1**, his environmental behaviour changed drastically from the level of pre-

contemplation in Phase 2 (immediately after ROEE), to the level of termination in Phase 3 (later after ROEE). The events in his life, which brought about these changes in his environmental behaviour, are depicted in **Figure 4.4** below.



**Figure 4.4** Raju’s progress of environmental behaviour change throughout the events in his life course

Raju encountered the event that made a notable change to his environmental behaviour approximately five or six years after he attended the ROEE course. For this reason, I decided that it was very interesting to analyse not only how he drastically changed his environmental behaviour, but also his stagnation before the notable change occurred.

#### 4.6.1 Before ROEE

Raju was 16 years-old when he attended a ROEE course. Like Borhan, he was in the stage of pre-contemplation before attending the ROEE course – and at that point he did not have any intention to change his behaviour in the foreseeable future (Prochaska et al., 1992), although he also was almost a grown up. He was as uninformed as Borhan, as he mistreated the environment by littering. In his own words, “I was a person that always

littered during my Form 4 and Form 5. Probably due to influence from friends even though I know that's wrong".

In the Malaysian educational system, the average age of Form (*Tingkatan*) 4 students is 16 years-old, while Form 5 students are 17 years-old. Raju's environmental behaviour remained unchanged even the year after attending ROEE. In addition, it is noteworthy that, similarly to Borhan, Raju also defined his primary group (see the definition of a primary group on p. 158-159 in **Section 4.4.3**) as consisting of his friends, and people who consequently had a negative influence on his environmental behaviour.

#### **4.6.2 Participation in ROEE**

Raju attended ROEE through his enrolment as a cadet member of the St. John Ambulance of Malaysia when in secondary school. In **Chapter 1**, associations such as St. John Ambulance of Malaysia, and Scout Association of Malaysia, were included among the organisations that organise ROEE. It was common for such associations to organise residential outdoor education programmes. Learning about the environment may not be the main emphasis in their programmes. However, through a careful analysis on their objectives, the outdoor approach that they used appeared to have the capacity to integrate environmental education, although this may occur indirectly. Raju's response below provides the evidence of this claim:

The learning activities were more on *medical stuff*... But they were sort of outdoor oriented... We learned about trails... We identified trees... what kind of animal that we need to be cautious of.

Although Raju claimed that he did gain knowledge about the environment from the course, the question that I sought answers to during the interviews (both the exploratory and the main study interviews) was why it took Raju about five years to change his behaviour.

#### **4.6.3 Prelude to Raju's notable environmental behaviour change**

The findings suggest that the type of knowledge that Raju gained from the ROEE was inadequate for encouraging him to perform pro-environmental action. Such knowledge

should comprise different kinds of knowledge and have a certain quality, and these should work together in a coherent manner if they are to foster pro-environmental action (Kaiser & Fuhrer, 2003). On one hand, the knowledge should be of the kind that could encourage Raju to move through the processes of consciousness raising, dramatic relief or environmental re-evaluation, (Prochaska and Velicer, 1997). According to Prochaska and Velicer, those who are in the stage of pre-contemplation would need at least one of these three processes of change outlined in the TTM to develop an intention to take action. On the other hand, Jensen (2002; 2004) suggests that to change environmental behaviour one needs to acquire knowledge about effects, root causes, strategies for change and alternatives and vision. Such knowledge provides information about the existence and spread of environmental problems, the reason why environmental problems occur, suggestions about how environmental problems can be solved, and ideas of other possibilities as a source of inspiration for personal motivation (Jensen, 2002; 2004). However, it appeared that neither this information, nor the three processes of change that Prochaska and Velicer (1997) suggest, were acquired by Raju from the ROEE course that he attended. If Raju had reflected on what he had learned about the environment from the course, he might have been able to identify the implicit messages or knowledge that were delivered during the ROEE course. However, since he was unable to do this, in order to bring about change further guidance or support were crucial – for example, with a follow-up or post-intervention learning activity.

Dillon et al. (2006), Gass (1985), and Uzzell et al. (1995) suggest that an effective follow-up after outdoor experiences is necessary to reinforce learning. According to Uzell et al. (1995), the follow-up should help and enable the participants to make clear links between the outdoor and indoor activities. This link is important because one of the common problems that hinders the effectiveness of an outdoor education course is the transfer of the knowledge that is acquired from the course into a different context or social environment (Brown, 2010). For the same reason, Kendall and Roger (2015) suggest that residential experiences should be more integrated with school-based learning that takes place before and after the trip away. However, frequently no effort is made to show how such knowledge is potentially influenced by the social processes in a new context, especially when the knowledge acquired is decontextualised and viewed as separate from the situations in which it was developed (Lobato, 2006). My analysis suggests that if one is able

to transfer the acquired knowledge into the social context in which the knowledge is to be applied, he/she will at least be open to an opportunity for going through the TTM's process of consciousness raising – a process in which Xiao et al. (2004b) believe people should be given new facts, ideas, and tips that support the positive behaviours and reject the negative behaviours.

Researchers suggest that the follow-up learning experiences should not necessarily use the same outdoor learning approaches as the ROEE course. For example, the follow-up activities could be in the form of learning in a classroom, or through an assessment. Howell (2012) and Mair and Laing (2013) propose a number of intervention activities that can be used to promote environmental behaviour change, which could also be used as follow-up activities for ROEE. However, Raju provided a different opinion regarding the reason for the failure of the ROEE that he attended, which did not result in any immediate environmental behaviour change: "It depends on interaction, who you interact with after the camp. If you interact with the wrong people, you are going back to square one, where you started". According to this extract, who the ROEE participants encountered having attended ROEE (and any intervention activities) should also be a concern. Raju was depending on support from those who would help him to change his behaviour. This finding is comparable to Soller's (2001) account of collaborative learning. Through an empirical analysis, Soller (2001) concluded that although effective learning occurs in groups, the benefits of the learning are not guaranteed unless it involves well-functioning learning teams and active engagement (Soller, 2001). By this she means that the members of the collaborative learning team should possess structured, high-level knowledge in context to increase the possibility of effective collaborative learning. As a result of my analysis of Raju's response, together with Soller's (2001) conclusions above, the findings of the current study suggest that, if one were not provided with follow-up work to reinforce learning, he/she should make an effort to seek to interact with the people who possess a certain knowledge and qualities, such as a positive attitude, that would encourage and facilitate his/her environmental behaviour change.

In relation to the TTM, this finding suggests that Raju was relying on the process of a helping relationship to change his environmental behaviour. This is the process of being open and trusting about problems regarding current behaviour with someone who cares (Prochaska et al., 1992). Raju's environmental behaviour might have changed sooner had

he sought help from individuals or groups who would provide social support for encouraging the change. In particular, Howell (2012) and Xiao et al. (2004b) suggest that the examples of interventions or techniques that they have provided – seeking help from family or friends, self-help groups, or buddy systems – can be used for this purpose. However, the TTM suggests that the process of helping relationship is particularly effective for those who are in the stages of action and maintenance – the stages in which individuals have already made overt changes within fewer or more than six months (Prochaska et al., 1992). In a study on eco-tourism, Mair and Laing (2013) provide evidence that supports this suggestion. Therefore, perhaps because Raju was in the lower stage, that is the stage of pre-contemplation, he did not consider taking the initiative and seeking help.

In addition, Raju indicated that his failure to change his behaviours was due to his personal norms. Ajzen (1991), Harland, Staats and Wilke (2007) and Schwartz (1977) define personal norms as feelings of moral obligation or responsibility to perform, or refuse to perform, a certain behaviour. In Schwartz's (1977) norm activation model, personal norms were defined as those that would make an impact on environmental behaviour change as the result of a perceived responsibility to take action and an awareness of consequences. In addition, the theory of planned behaviour (Ajzen, 1991), the model of responsible environmental behaviour (Hines et al., 1987), and the value-belief-norm theory of environmentalism (Stern, 1999) also suggest personal norms are predictors for performing pro-environmental action. The extract below was Raju's response that shows the influence of personal norms on his environmental behaviour:

I still remember they told me not to litter in the jungle... Of course we should know we shouldn't litter anywhere, not just in the jungle. But previously I thought it wouldn't be a problem to litter at other places because we know someone will clean it up.

These circumstances accurately reflect Kaiser and Shimoda's (1999) position, as they suggest that a sense of guilt is one of the foundations of the feeling of a perceived personal responsibility to perform pro-environmental action. Raju's response in the extract above indicates that he had no sense of guilt as he was not aware that his thoughts about littering were wrong, and he also did not acknowledge his responsibility to care about the environment. Instead, the responsibility was thought to be others'.

#### 4.6.4 Raju's notable environmental behaviour change

Raju's environmental behaviour changed notably through his affiliation with the Malaysia campus of the University of Nottingham, which is the university where he received his Bachelor and Masters degrees. He specifically attributed the change in his environmental behaviour to the social norms of the university, and also to several subjects in the chemical engineering programme and the Masters programme that he studied. I have already discussed comprehensively how social norms could influence environmental change in the vignettes of Halina and Borhan by using the theory of normative conduct by Cialdini et al. (1991). Therefore, in this section, I shall not repeat the sociological theoretical discussions. Instead, I emphasise more the situations and the life events in which these factors had an influence on Raju's environmental behaviour change, and my analysis of the findings in relation to the TTM.

In comparison to the vignettes of Halina and Borhan, the influence of social norms on Raju's environmental behaviour change was more comparable to Halina's. The result from my fine-grained analysis suggests that, although Raju did not experience living abroad as Halina did, but studied at a Malaysia campus of a British university, it is very likely that he was exposed to British environmental norms even although it was clearly stated in the campus's official website that *"the Malaysia Campus is an integral part of The University of Nottingham, UK and offers students the Nottingham experience in a setting that's truly Asia"* (The University of Nottingham, 2016).

Based on the Environmental Sustainability Index (ESI) 2012 – the indicator that I used while discussing the comparison between the legislation and environmental norms in Malaysia and Switzerland in the vignette of Halina – it was found that the United Kingdom also ranked higher than Malaysia. While Malaysia ranked 25<sup>th</sup> on the 2012 ESI, the United Kingdom ranked 9<sup>th</sup> (Emerson et al., 2012). This finding suggests that the United Kingdom has better environmental legislation and norms than Malaysia. Another way to compare the environmental norms in the UK with Malaysia is through a comparison of the behaviour of household waste management. While the enforcement to segregate solid waste in Malaysia only began in September 2015, Barr (2007) reported that household waste management is a highly normative behaviour in the United Kingdom. Therefore, this analysis supported the view that Raju's environmental behaviour change was prompted by

the better environmental norms he experienced in the campus where he studied. In addition, this finding suggests that to be influenced by better foreign social or environmental norms, one does not necessarily need to go abroad because the foreign social norms can also be brought into a local physical context.

Regarding Raju's attribution of the formal learning through the subjects in the programme he studied to the reasons for his environmental behaviour change, he noted:

There were modules in the programme, there were more things relating to the environment... through the modules, they taught me about the environment, like sustainable energy. So, I came to realise that the environment is not only about animals and go into jungles. There are lot of things. Energy, food security and other things like that, that are more related to myself.

This finding proves that my concern at the beginning of the current study, and my argument in the previous section about the disparity between the knowledge that is acquired from ROEE and the knowledge that is required for performing pro-environmental actions in a different social context, was reasonable. This current study was the result of my concern about the ability of ROEE courses, which are commonly organised in unfamiliar settings and at a significant distance from their participants' daily physical environmental contexts, to produce behavioural outcomes. In addition, in the previous section of this vignette, I also discussed how Brown (2010), Gass and Priest (1993), Lobato (2006) and Priest and Gass (2005) suggest that it is necessary to find a way to transfer the knowledge that is acquired from an intervention course into a new social context. The subjects in the chemical engineering programme provided Raju with a broader concept of the environment. But more important is the fact that the broader knowledge enabled him to initiate his environmental behaviour change because he found the knowledge was related to him and his own situation.

As soon as he recognised the relevance of the environmental knowledge to his life, he was convinced that he should change his environmental behaviour. During the process of consciousness raising – the process of increasing information about self and problem (Prochaska et al., 1992) – Raju became involved in various pro-environmental actions: he started recycling at home with his family, he joined an environmental association in the local community, he shared his knowledge about the environment with friends, he joined

environmental volunteering programmes, he pursued a Masters in an environmental related field, he worked for an environmental NGO, and he did a part-time job as a research assistant for environmental research. These actions reflect the process of self-liberation in the TTM, which Prochaska et al. (1992, p. 1108) define as “choosing and commitment to act or belief in ability to change”.

Through his learning experience in the M.Sc. in Environmental Monitoring and Management at the same university, Raju advanced his environmental behaviour change through a comprehensive range of processes of change. Not only did he experience the process of consciousness raising which is recommended for people who are at an early stage of change, but also the processes of self-evaluation and counterconditioning that are appropriate for those who are at the stages of preparation, action or maintenance (Prochaska & Velicer, 1997). Self-evaluation refers to the process by which one assesses how he/she feels and thinks about the influence of his/her current behaviour when dealing with a problem, whereas counterconditioning requires acknowledging that the current behaviour is wrong and should be substituted by a better alternative of positive behaviours (Prochaska et al., 1992):

There was more environmental knowledge given to us. Like why [environmental] problems occurred... There was a progress of knowledge I gained. In my degree, when I went hiking, I was told that we need a lot of different types of trees in the forest, so we cannot chop down the trees, and we should plant more trees. In my masters programme, I learnt that that is not necessarily right. Especially if there is too much of invasive species, they can kill other species.

Through a more extensive knowledge, Raju was able to think critically about other possibilities of the impact made by particular actions, and subsequently make a critical judgement about which actions were actually better actions.

As a result of factors related to his affiliation with the university, Raju was able to sustain his environmental behaviour for a very long time. For example, at the stage of the main study interview, he was still actively recycling with his family, had joined a number of environmental volunteering activities, and even planned to pursue his studies at Ph.D. level in environmental education. In addition, although he is permanently working in an area that is not related to the environment, he used his network in his former university to

become involved in a number of environmental research projects, activities which are comparable to the account of the process of helping relationship in the TTM:

I got information about the opportunities directly from my lecturers of my previous university... And some of them are active on Facebook and sometimes they advertise [on Facebook] when they need research assistant for the forest management study. So, I submitted my application.

In the previous section, in response to Raju's suggestion concerning the importance of interaction after attending ROEE, the findings suggest that the process of helping relationships should have changed Raju's environmental behaviour sooner. The TTM's process of helping relationship is one of the main processes that had encouraged Raju's progression in his environmental behaviour change. He was able to continuously perform the pro-environmental actions as a result of his own initiative to seek and use social support from those people who would positively encourage him to change his environmental behaviour. According to my analysis, this process was the result of Raju's understanding of the social dynamics in his surroundings. Social dynamics refers to the behaviour that results from the interaction that occurs between all of the social elements in the social group (Johnson & Johnson, 2009). Understanding the interactions in the social group could be important because different groups that exists within social communities may have a different nature or basic structure (Eyler, 2009; Johnson & Johnson, 2009). In knowing that he could not make significant changes to the environment that inhibited his preferred behaviour, Raju sought different social communities that would allow him to actively perform pro-environmental actions. Consequently, his job did not ultimately prevent him from practising pro-environmental actions.

From another perspective, the resulting behaviours that Raju reported also reinforce the earlier discussion of the importance of 'beyond school walls contexts' which are a feature of ESD 2 and transformative environmental education. ESD 2 promotes "building capacity to think critically about [and beyond] what experts say... and exploring the contradictions inherent in sustainable living" (Vare & Scott, 2007, p. 3-4), and transformative environmental education calls for the need to perform environmental actions through wise judgements about a particular environmental action in certain circumstances (Ashley, 2005; Jickling & Wals, 2008). This conclusion is supported by the fact that Raju was able critically and independently to analyse the social dynamics, make proper judgments when deciding

which environmental values were right or wrong, find alternatives and negotiate his decisions. These are all important abilities which reflect the concept of ESD 2, as defined by Vare and Scott (2007), Ashley's (2005) and Jickling and Wals' (2008) concept of transformative environmental actions (see **Section 2.4**).

Having undertaken a detailed analysis of the interview with Raju, the findings suggest that the exploratory interview of the current study also influenced his environmental behaviour change, particularly with regard to his intention to pursue his study at the Ph.D. level in environmental education. In the section of **Main Study Interviews (Section 3.4.5.4)** I suggested that the exploratory interview may have triggered the participants' memories of their ROEE experiences, which would have encouraged them to reflect again on their learning during the course, and possibly take action. However, Raju's case was different because his intention to pursue a Ph.D. in environmental education was influenced by the the current study. According to him, "the interview shows me that there is something going on with this issue [environmental education]". My analysis using the TTM suggests that the exploratory interview of the current study had encouraged Raju to go through the process of consciousness raising (see definition in **Section 2.7.2**), and the interview led him to consider studying environmental education at Ph.D. level.

#### **4.6.5 Summary of Raju's vignette**

As explained in this vignette, there is a marked progress in Raju's environmental behaviour change after being flat and steady for quite some time. Similarly to Halina's experience, Raju reported no impact from the ROEE on his environmental behaviour change. The environmental knowledge he learned from the course was not helpful in encouraging the change as the knowledge appeared to be inadequate in enabling Raju to proceed with any process in the TTM. A particularly interesting finding in this vignette is Raju's opinions concerning the importance of interaction that could be included in a follow-up or post-intervention learning activity after the ROEE course. In particular, he highlighted the element of 'who', or the social groups that might be involved in the interaction; this was also one of the factors that hindered his environmental behaviour change, along with the fact that he did not acknowledge his responsibility for performing pro-environmental actions.

From the graph, it is shown that the marked progress began when Raju attended the Malaysian campus of a British university. Influenced by the social norms within the community of the university and the subjects that he formally learned through the Bachelor and Masters degree programmes that he studied, it appears that Raju went through a number of the TTM's processes such as consciousness raising, self-liberation, self-evaluation, and counterconditioning. In addition, he also went through the process of helping relationship. As a result, Raju's environmental behaviour changed remarkably from the stage of pre-contemplation to termination as he showed no sign of regression. Instead, he seemed to be very enthusiastic about performing various pro-environmental actions.

Although I did not discuss in detail the findings on the influence of social norms on Raju's environmental behaviour change, the fact that he acknowledged this influence through his affiliation with his former university has further strengthened the overall findings concerning the impact of this factor on environmental behaviour change in general. In addition, the brief discussion that is presented in this vignette regarding this factor provides an interesting insight: environmental norms from other countries can also have an influence on one's environmental behaviour even although he/she has never experienced living abroad.

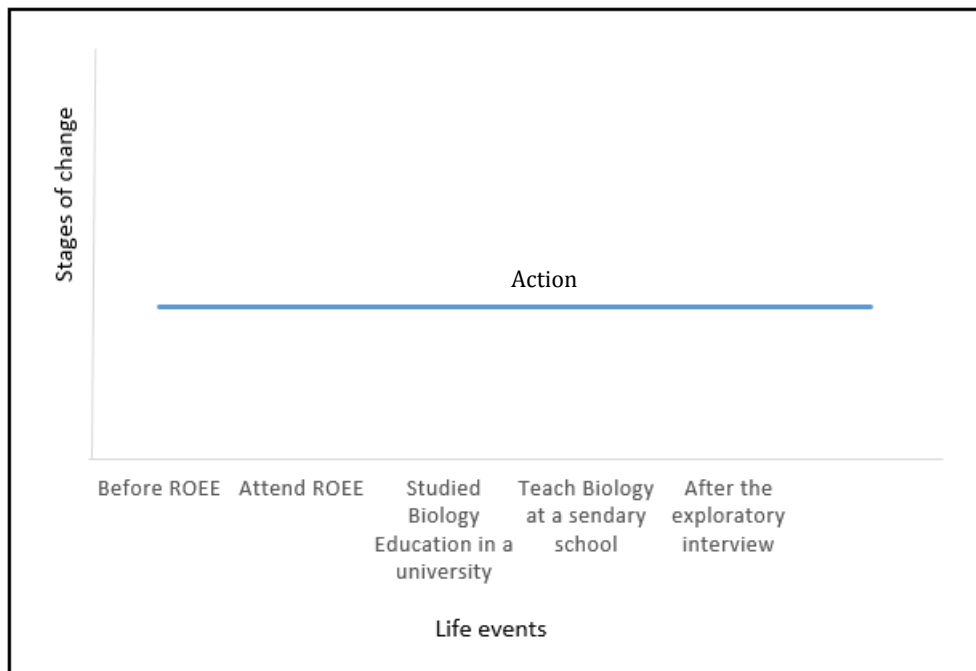
With regard to the impact of the exploratory interview on the current study, what was uncovered in the analysis of the interview data with Raju is that the interview also has the ability to influence participants to change their environmental behaviour by providing new ideas of what can they do for the environment which were not learned in the ROEE course.

#### **4.7 Vignette of Felix: A 'Non-changer'**

Based on **Table 4.1** and **Figure 4.1**, there were three participants that I considered to be non-changers – those who did not experience, or experienced very little, change in the stages of change in their environmental behaviour for extended periods of time: Alia, Faizah and Felix. From these three participants, I decided to present Felix's vignette because he remained at the same stages for longer periods of time, although he had encountered various events in his life. With regard to the TTM, he had been in the stage of action since before he attended ROEE up to the date he participated in the main study

interview of the current study. In the TTM, action is the stage in which someone has made an effort to make changes in their life-style (Prochaska et al., 1992).

In the paragraphs that follow, I present the details of Felix's experience with regard to his environmental behaviour throughout his life course, which also can be illustrated in a graph as shown below in **Figure 4.5**.



**Figure 4.5** Felix's progress of environmental behaviour change throughout his life course

Unlike the previous three vignettes, there are only four sections in this vignette: before ROEE, participation in ROEE, after ROEE and the summary. The third section merges the sections that explain the prelude to a notable environmental change and the events that caused a notable environmental change, which were presented separately in the earlier vignettes. This is because the analyses that were conducted on Felix's narration suggest that he had not changed the stage he was at in the TTM within the 20 years after he had attended the ROEE course until he participated in the exploratory interview.

#### **4.7.1 Before ROEE**

Felix was nine years old when he attended the ROEE course. In spite of this, he had already become involved in a number of pro-environmental actions. According to him, he joined the environmental society in his school, and he sometimes gardened at home. This finding is rather impressive. Compared to Borhan and Raju, who joined ROEE at the end of secondary school, Felix had already been involved with a pro-environmental action since he had been in primary school. With regard to his gardening, he commented that, “my mum loves gardening. I sometimes helped her to tend to the plants”. This extract reveals what encouraged Felix to perform the pro-environmental action. With regard to the TTM, it would appear that Felix’s actions, including his participation in the environmental society in his school, were related to the process of social liberation, which Prochaska et al. (1992) describe as the process that makes the alternatives for performing positive behaviours available in society. In his case, the opportunities to perform alternative (pro-environmental) actions were available as the environmental society was established in his school, while his mother’s hobby also had enabled him to become involved with the activity.

#### **4.7.2 Participation in ROEE**

Felix’s participation in ROEE was the result of his membership in the environmental society in his school. The course was organised for the members of the society. Since the course took place in a reserve forest, the teaching and learning emphasised the rainforest:

If I’m not mistaken, we learnt about endangered wild life and its conservation... Rhinoceros, orang utan, proboscis monkey. There was also something about conservation, a talk about declining numbers of wildlife, increased deforestation... But I couldn’t understand. I was still a kid back then.

The content of the course provided Felix with information about environmental problems, which Frick et al. (2004) and Jensen (2002; 2004) deem to be required knowledge for producing behavioural outcomes in learning. As discussed previously, Frick et al. (2004), Jensen (2002; 2004) and Kaiser and Fuhrer (2003) suggest that such knowledge should comprise a convergence of different types of knowledge. It is also notable that Felix

believed that his ability to engage fully with the environmental learning at that time was limited due to his young age.

#### **4.7.3 After ROEE**

As reported in the previous section, Felix suggested that his age at the time limited his ability to learn about the environment during the course. Surprisingly, in another extract, he reported that there was a pro-environmental action that he performed when he returned home, as a result of his participation in the course. In his own words, Felix explained: "Gardening... Stemmed from their teaching about the issue of deforestation, I planted flowers... Because I thought we should increase the number of trees". Gardening was not a new action for Felix; he had already been involved in the activity before attending the ROEE course. However, comparison between the two extracts above suggests that Felix's motivation to garden in the two phases of his life were different. In the vignette of Borhan, I discussed the comparison between egoistic and biospheric value orientations. In Felix's case, it seemed that his motivation shifted from altruistic value oriented to biospheric value oriented. To recap, a biospheric value orientation refers to concerns for the perceived costs and benefits for the ecosystem and biosphere (de Groot & Steg, 2008; Lee, 2011). On the other hand, "people with a social-altruistic value orientation will base their decision to behave pro-environmentally or not on perceived costs and benefits for other people" (de Groot & Steg, 2008, p. 333). Therefore, I concluded that Felix's motivation for gardening before attending the ROEE course was altruistically oriented, while his motivation for gardening after the ROEE was biospherically oriented. In relation to the TTM, it seems that these two actions, whether altruistic or biospheric, can be considered to be driven by the process of environmental re-evaluation. In the beginning, Prochaska et al. (1992) define the process of environmental re-evaluation as the process of assessing how one's problem affects the physical environment. However, later Prochaska and Velicer (1997) redefine this concept, and suggest that the concept of the environment in this process is not limited to the physical environment, but also includes the social environment. The earlier definition seems to be more related to the concept of biospheric value orientation, while the latter includes the concept of altruistic value orientation.

The circumstance in which Felix's motivation shifted from altruistic value oriented to biospheric value oriented indicates that the ROEE course had somehow produced an important outcome for Felix, although the pro-environmental action performed was not recently developed. However, the findings from the analysis that was conducted on Felix's life story contrast with those from Borhan's vignette. In Borhan's vignette, the findings suggest that we can predict that a biospheric value orientation may sustain one's environmental action over an extended period of time. However, in Felix's case, the biospheric value orientation that was developed from the ROEE course did not last long. Borhan's and Felix's experiences were compared and contrasted in an attempt to provide a possible explanation for this situation. The findings revealed that what distinguished Borhan's and Felix's experiences from each other was the time gap between the continuums of experiences they had encountered, the importance of which was emphasised by Dewey (1938). Felix attended the ROEE course when he was nine years old. Although this had changed his motivation to garden from an altruistic to a biospheric value orientation, the next intervention event was when he enrolled in university to study Biology Education for his Bachelor's degree, approximately nine years after the ROEE course. In contrast, in Borhan's case, although the ROEE course that he had attended did not result in any change in his environmental behaviour, once he encountered the event that changed his environmental behaviour, the event provided him with a continuous reinforcement that encouraged him to progress in his environmental change, until he finally reached the stage of termination in the TTM – the stage in which one is not tempted to regress (Prochaska & Velicer, 1997).

Felix studied Biology Education for his Bachelors degree and is currently a Biology teacher. When he was in university, there were two pro-environmental actions that he performed. First, he organised a trekking expedition to the summit of Mount Kinabalu and, second, he developed a module for teaching about the environment, which was for his final year research project. With regard to the second action, as is the case with most research, Felix did conduct a literature review on related topics. The process of compiling a literature review had a positive impact on Felix: "While completing the project, I did a lot of literature review, and it helped me to understand environmental issues better". This circumstance reflects the TTM's process of consciousness raising that is similar to the process that influenced Felix's decision to garden after the ROEE course. However, interestingly, Felix

denied that both of the actions – organising a trekking expedition and developing a module for teaching about the environment – were driven by a biospheric value orientation; his motivation was altruistically oriented just as when he was helping his mother with gardening before he attended the ROEE course. In relation to the trekking expedition, according to him: “the main objective of the activity was to nurture close relationships between the participants”, whereas his final year research project was influenced by his concern about problems in learning Biology.

Because students tend to have a very high rate of misconception about these chapters. As such, the module was developed in order to address the misconception.

According to my analysis, Felix’s area of study had the potential to encourage both altruistic and biospheric value orientations. Teaching is mainly altruistic in nature – for example, to make a social contribution, to impart knowledge, to shape the future, to give something back to the educational system which nurtured them, or to fulfil what they perceive as a God-given mission (Brown, 1992; Richardson & Watt, 2006). On the other hand, Biology is one of the subjects that is most relevant to environmental education (Syed Abdullah, Halim & Mohd Sahali, 2011). Therefore, it was unlikely that Felix lacked environmental knowledge. Although there are many types of environmental knowledge deemed to be required for one to notably change his/her environmental behaviour (Jensen, 2002; 2004; Frick et al., 2004; Kaiser & Fuhrer, 2003), his academic background, especially with regard to the field of his Bachelors degree, should have provided him with ample knowledge for him to be able to progress his environmental behaviour to a higher stage. However, as demonstrated by the extract above, it seemed that Felix naturally has a tendency to perceive an altruistic value orientation more than a biospheric value orientation. Consequently, this finding supports the conclusions from previous studies (Howell, 2012; Ojea & Loureiro, 2007; Stern et al., 1995) that a biospheric value orientation plays a less crucial role than an altruistic value orientation. In addition, it is also suggested that the findings corroborate those of many other studies that claim that knowledge is not very consequential (e.g. Bamberg & Möser, 2007; Fielding & Head, 2012; Hwang, Kim & Jeng, 2000; Steg & Vlek, 2009). In other words, knowledge may not necessarily be sufficient to foster one to perform pro-environmental actions.

As mentioned above, both biospheric and altruistic value orientations are comparable to the TTM's process of environmental re-evaluation. According to Prochaska and Velicer (1997), the process of environmental re-evaluation is one that is more suitable for those who are in the stage of pre-contemplation. In the TTM, the stage of pre-contemplation is the stage in which one has no motivation or intention to perform a particular action (Prochaska et al., 1992). If one goes through the process of environmental re-evaluation, he/she could move to the stage of contemplation – the stage in which “people are aware that a problem exists and are seriously thinking about overcoming it but have not yet made a commitment to take action” (Prochaska et al., 1992, p. 1103). Similarly, the process of consciousness raising, which was identified as another process that Felix went through during the ROEE course, is also a process of change that Prochaska et al. (1992) recommend as an intervention for those who are in the stage of pre-contemplation. Therefore, the findings suggest that it was for this reason that the ROEE course that Felix attended was not successful in retaining its outcome, particularly in the shift of Felix's value orientation to perform pro-environmental actions.

Had the programme that he attended in the university provided him with opportunities to go through a more appropriate process of change, better behavioural outcomes may have been produced. According to Prochaska and Velicer (1997), when progressing from the stage of action to the stage of maintenance or higher, one needs to go through the processes of counterconditioning, stimulus control, contingency management and/or helping relationship. Counterconditioning is the process of substituting alternatives for problem behaviours; stimulus control is the process of avoiding or countering stimuli that elicit problem behaviours; contingency management is the process of rewarding one's self or being rewarded by others for making changes; and helping relationship is the process of being open and trusting about problems with someone who cares. In her study, Howell (2012) suggests a number of interventions and techniques to promote these four processes for encouraging environmental behaviour change. Among them are avoidance, restructuring the environment, self-help groups, buddy systems, self-reward, contingency contracts, and group recognition (Howell, 2012).

My analysis led me to conclude that these four processes were particularly important for the programme in the university, because they were more appropriate to his age while he was at university. It could be argued that it is too much to expect a nine year old child to go

through these processes of change on their own after the ROEE course. Unless immediate and regular follow-up interventions had been provided, as suggested by Dillon et al. (2006), Gass (1985), and Uzzell et al. (1995), it is unlikely that Felix would have been able to improve his environmental behaviour following the ROEE course. However, the follow-up intervention would need to use the approach in which the required skills – for example, to develop an ability to work with data, see new connections between elements, appreciate different perspectives and take advantage of serendipity – were introduced, repeated and challenged (Diamond & Lee, 2011). These skills would have to be developed stage by stage to match the learner's current age and stage of behaviour change. There are further indications that the ROEE course that Felix attended met three of the 'Brilliant Residentials' criteria that Kendall and Roger (2015, p. ix-x) proposed: "progressive residentials; providing residentials that are embedded within existing programmes of delivery; and providing memorable experiences". Thus, the data support the crucial point made earlier (p. 187-188) concerning the importance of follow-up interventions after ROEEs.

Felix indicated that he perceived that there had been no change in his stage of change in the TTM even after he had been teaching Biology at secondary school for more than seven years. This was because of: his natural tendency to perceive an altruistic value orientation; the less crucial role of biospheric value orientation and knowledge for fostering pro-environmental actions; and the lack of an immediate follow-up intervention. He claimed that he did teach his students about the environment. However, this was because he was in a situation that obliged him to do so. There were two chapters relating to the environment contained in the Form 4's Biology curriculum namely 'Dynamic Ecosystem' and 'Endangered Ecosystem' (Curriculum Development Centre, 2005), hence he only taught his students about the environment through these topics. In addition, although he became involved in another pro-environmental activity after participating in the exploratory interview of the current study – he is an advisor for a recycling programme at the school where he teaches – he claimed that the action was not voluntary. In addition, similarly to Halina and Borhan, Felix also claimed that the exploratory interview of the current study did not influence his pro-environmental actions in any way, although the interview may have made him recall his ROEE experience or given him ideas about how to perform other kinds of actions, as was the case with Raju. Because Felix was only involved in or performed pro-environmental actions very occasionally, I concluded that he did not progress to a higher stage of change.

This is because one can be considered to be in the stage of maintenance only if the actions that are performed are continuously overt for more than six months (Prochaska et al., 1992).

#### **4.7.4 Summary of Felix's vignette**

In reference to the TTM, as shown in the graph above, Felix's environmental behaviour stagnated throughout his life course. He was already in the stage of action before the ROEE course, but the stage remained the same after participating in ROEE, and also after going through several other events in his life. However, this finding does not suggest that the ROEE course he attended did not produce any behavioural outcomes. Although Felix's environmental behaviour remained at the same level, the course changed his motivation to perform the pro-environmental action that he had been doing previously. While his motivation to perform pro-environmental actions before attending ROEE was altruistically oriented, after the course the action became biospherically oriented and due to a concern for the environment. However, the change in Felix's motivation did not last long.

He studied Biology Education at university, and has been teaching Biology at a secondary school for seven years, which suggests that his environmental behaviour may have progressed to a higher stage of change. However, not only did the stage of his environmental behaviour fail to improve, but his motivation to perform pro-environmental actions reverted to the original motivation, which was based on an altruistic value orientation.

Based on my critical analysis, the findings suggest that the stagnation in Felix's environmental behaviour was due to the inability of events to make Felix perceive or experience the standard of processes that Felix required in order to progress. According to the TMM, those who are in the stage of action need to go through the processes of counterconditioning, stimulus control, contingency management and/or helping relationship (Prochaska & Velicer, 1997). However, the events in Felix's life course appeared only to have made him go through the processes of consciousness raising and environmental re-evaluation, which Prochaska and Velicer (1997) suggest are more appropriate for those who are in the stage of pre-contemplation. This finding suggests that

ROEE should be planned to meet the needs of people at different stages of change. Having said this, Felix's motivation to perform pro-environmental action became altruistic again, due to his natural tendency to be influenced by an altruistic value orientation, the less crucial role of a biospheric value orientation and knowledge for fostering pro-environmental actions, and the non-appearance of immediate follow-up interventions. However, although Felix has remained in the stage of action for many years, and his actions are mostly driven by an altruistic value orientation, the findings suggest that these situations are not necessarily problematic as his involvement in various pro-environmental activities are still contributing to environmental conservation.

#### **4.8 Chapter summary**

In this chapter I have discussed the environmental behaviour change that was experienced by four participants throughout their life course from before they attended ROEE courses until they participated in the main study interview of the current study. The findings were presented in the form of vignettes, which allowed me to focus on the real lives that were experienced by real people, which were influenced by their personal life journeys (Barter & Renold, 1999). Therefore, the findings presented through vignettes are unique for each of the participants.

The analyses of environmental behaviour change in the vignettes were mainly framed by the Transtheoretical model (TTM), particularly the six stages of change (i.e. pre-contemplation, contemplation, preparation, action, maintenance, and termination) and the ten processes of change (i.e. consciousness raising, dramatic relief, self-re-evaluation, environmental re-evaluation, self-liberation, social liberation, counterconditioning, stimulus control, contingency management and helping relationship). The selection of participants for the vignette presentations was also made based on the literature of this model. The four participants in this chapter were selected as they represented the different ways that people experience environmental behaviour change throughout their life course. While Lipschitz et al. (2015) propose three groups of individuals with comparable longitudinal patterns of change, maintainers, relapsers and nonchangers, the present study added another group which I have termed 'transcenders'.

When reviewing these four participants' life experiences of environmental behaviour change, the findings revealed that most of the ROEE courses analysed in this chapter did not meet the criteria for 'Brilliant Residentials' other than providing new experiences. In addition, the ROEE courses they experienced during their schooldays were not the primary events or interventions that accounted in any significant way for their environmental behaviour change. Based on the analyses that were conducted, the factors that appeared to provide reasons for change were: the content of the course (i.e. the types of environmental knowledge learnt during the course) and problems relating to subsequent experiences after the ROEE. With regard to the former reason, it was found that the ability of ROEE to change the participants' environmental behaviour was determined by the processes of change which they experienced as a result of the course. These changes in environmental behaviour became effective when the intervention encouraged appropriate processes of change according to the participants' current stage of change when they attended the course.

Nevertheless, the resulting action from ROEE became more concrete because it was reinforced by the social environment of participants' subsequent life experiences. One participant's pro-environmental behaviour was inhibited but then recovered again when she changed her social environment. As a result, these findings suggest that a supportive social environment is essential to reinforce what the participants learned from the ROEE courses that they attended. In most of the cases, their environmental behaviour change was hindered because of lack of support from their social group. Therefore, notable changes mostly occurred after an extended period of time during which they moved into new social environments which were more supportive of the change (e.g. living in Switzerland; being enrolled in university; working in an environmental institute). When ROEE was influential in environmental behavioural change, the achievement was driven by the TTM processes of consciousness raising, self-re-evaluation, social liberation and helping relationship.

With regard to the other life events, social norms and primary groups within a particular social context or environment seemed to be among the key factors that influenced the participants' environmental behaviour change, with the boundary of the social context or environment being as large as a country, or as small as the context of an institution, or within a family. With regard to the social norms, the findings in this chapter indicate that

social norms made an influence on their environmental behaviour based on the ways they reacted to their perception of what most people do (descriptive norms) and/or to their perception of what people approve or disapprove of (injunctive norms) (Cialdini et al., 1991). On the other hand, the findings focusing on the influence of social groups reflect Cooley's (1955) notion of the primary group, and suggest that these primary groups strongly influence the attitudes and actions of its individual members.

The findings in this chapter are the result of the analysis of data from the exploratory interviews and the main study interviews. It was anticipated that participation in the first interview would result in changes in the environmental behaviour of the participants because the interview would be likely to trigger their memories about what they had learned from the ROEE course that they attended in school. However, only one participant – the transcender – reported that the exploratory interview influenced and brought about his environmental behaviour change, although not in the way that was predicted. Instead, the exploratory interview initiated the process of consciousness raising for the participant whereby he had a new idea for another kind of pro-environmental action that he could perform.

Having analysed interview transcripts focussing on the longitudinal pattern of individual personal life histories, several key themes have emerged. In the following chapter, the outcome of the thematic analysis both within individual interviews, in the pairs of interviews for each participant, and across the whole set of interview transcripts are presented.

## Chapter 5 FINDINGS 2: BINARY THEMES

### 5.1 Chapter overview

As explained in **Chapter 4**, because of the constructivist grounded theory approach adopted for this study, which features inductive, deductive and abductive reasoning (Charmaz, 2006), the study's data were rich and complex. In order to provide a 'thick' account of this data (Geertz, 1973), it was decided that the study's findings would be presented based on, first, the analysis of longitudinal patterns within individuals' life histories and, second, on a thematic analysis across the whole set of interview transcripts. This structure enabled the analysis to profit from these two complementary approaches to interpreting the data. The previous chapter (**Chapter 4**) presented four life history vignettes, and drew heavily on the Transtheoretical model (TTM) (Prochaska et al., 1992). This chapter presents findings that emerged from the thematic analysis, and is structured into three categories of binary themes: major new binary themes, minor new binary themes, and existing binary themes. The chapter is divided into four sections. First, I outline the rationale for using binary themes to present the findings of the thematic analysis. Second, I introduce the new binary themes that emerged inductively. Third, I present the existing binary themes that emerged deductively. Fourth, I show how binary themes were arrived at through an abductive approach, which allows a more fine-grained interrogation of the data, which will in turn inform the discussion and conclusions that are presented in the final chapter, **Chapter 6**.

### 5.2 Rationale for presenting binary themes

In contrast to the findings presented in **Chapter 4**, in which selected participants' life histories are presented individually in the form of vignettes, presenting research findings thematically involves drawing on the entire dataset (Thorne, 2000). This ensures that data from the other research participants (whose personal life histories were not presented in the vignettes) are given due consideration. For this reason, the findings in this chapter pay slightly more attention to the participants who did not have a vignette written about them.

Another benefit of thematic analysis is that it can be theoretically flexible, since different frameworks or epistemological positions can be used to answer the research questions (Braun & Clarke, 2006). In this study, the methods of thematic analysis that are presented in **Chapter 3** align with the framework of Charmaz's constructivist grounded theory and a life history approach (narrative analysis), which celebrates interaction between the researcher and the participants through a process of interpreting participants' meanings in relation to multiple social realities (Charmaz, 2014; Thorne, 2000). By way of contrast, **Chapter 4** employed the TTM (Prochaska et al., 1992) as the theoretical framework. Therefore, the thematic findings that follow have emerged abductively from a combination of these three theories: Charmaz's (2006; 2014) constructivist grounded theory, life history (Uzzell et al., 2010), and the Transtheoretical model (TTM) (Prochaska et al., 1992). As explained in **Chapter 3**, abductive analysis is an analytical approach that offers researchers the means to enrich and strengthen research findings through constant comparative methods, both inductively and deductively (Charmaz, 2006).

Various themes emerged from the data during thematic analysis. However, sensitising concepts (Blumer, 1956) from exploratory interviews drew the focus of the study to different types of pro-environmental actions that are performed in different binary conditions. Binary, in this context, means that the pro-environmental action takes one of two possible forms (Cox & Snell, 1989). For example, as will be seen in this chapter, pro-environmental action can be performed either as a direct or indirect action. Direct action and indirect action in this context are binary as the pro-environmental action generally reflects actions that exist on two ends of a spectrum.

Many studies have explored pro-environmental actions (see for example, Steg & Vlek, 2009; Jensen, 2002; Whitmarsh & O'Neil, 2010). However, only a handful have discussed them in the context of binary themes or perspectives, and these studies only looked at one or two possible action binaries, as opposed to the current study's more comprehensive categorisation of findings into a range of existing and new binary themes. Stern (2000) attempts to discuss environmental behaviour in binary form in his study, suggesting there are several distinct types of environmentally significant behaviours: environmental activism, non-activist behaviours in the public sphere, and private-sphere environmentalism. However, clear distinguishing features of each concept are missing. For example, Stern (2000) proposes that pro-environmental actions can be performed within public sphere or

private sphere environmentalism, both as activist and non-activist behaviours. However, when defining them, his explanations of non-activist behaviours and public sphere environmentalism are combined, thus making them appear to be one and the same concept. Other studies employing a binary theme approach are those that make comparisons between biospheric and anthropocentric value orientations (e.g. Amérigo et al., 2007, Howell, 2012; Kopnina, 2014; Ojea & Loureiro, 2007). Other than these studies, pro-environmental actions have been discussed from one perspective only. An example of this is Kollmuss and Agyeman's (2002) study, which focused primarily on direct pro-environmental actions. Therefore, the current study attempts to extend the environmental education literature by exploring the diversity of pro-environmental actions that can be performed, by pulling together all of these binary themes, whether they are existing ones or those that have emerged from the data.

The binary themes presented in this chapter did not emerge directly from the particular ROEE courses in which the interviewees in the study participated; rather, as the process of analysis of the exploratory and main interviews progressed from coding to constant comparison to assigning themes, it gradually became clear that dominant binary oppositions were emerging.

### **5.3 Emerging binary themes**

A detailed account was provided in **Chapter 3** of how the data were analysed in such a way as to produce binary themes. As a result of this analysis, nine key binary themes emerged – five were new and four already existed. The previous section detailed how the presentation of the findings using binary themes seeks to contribute new knowledge to the discourse on pro-environmental actions. In order to make this contribution more focused, the new binary themes were further divided into two categories, namely, major and minor. Identifying these key findings enabled me better to focus my interpretation of the most prominent themes in relation to the literature. For the same reason, this chapter presents the major themes in detail, and only briefly discusses the minor themes. It is important to note that there is overlap in some cases, as one type of pro-environmental action can be

categorised by more than one binary perspective. The paragraphs that follow explain these categorisations in more depth.

### **5.3.1 New binary themes**

Five new binary themes have been derived from the inductive analysis of the interview data, all of which have situational relevance. These have been chosen as new themes because they are associated with social conditions, which are not discussed in these terms and in this binary way in the literature. Of these five themes, two form the first category of major new themes on which I will primarily focus, and the rest form the second category of minor new themes.

In the section on **Environmental Education for Environmental Behaviour Change and Sustainable Development** within the literature review (**Section 2.4**), it was explained how many conceptual papers on Education for Sustainable Development (ESD) (e.g. Ashley, 2005; Jickling & Wals, 2008; Vare & Scott, 2007) view environmental behaviour as socially influenced. These were complemented by the empirical studies reported by Gass et al. (2003), Howell (2012) and Takano (2010), which supported claims about the social influences on environmental behaviours. Furthermore, in **Chapter 4**, after presenting four vignettes of the life stories of a 'relapser', 'maintainer', 'transcender' and 'nonchanger', I concluded that social norms, social groups, and laws and policies are the key influences which promote environmental behaviour change. Taking this finding into account, the category of major new themes comprises two pairs of pro-environmental actions: conforming/transforming actions and compulsory/optional actions. These new themes are more closely associated with the three social conditions. Therefore, by presenting these as major themes, the current study provides a richer account of the ways in which social norms, social groups, and laws and policies encourage or inhibit the progress of environmental behaviour change.

**Table 5.1** Major new themes

Binary themes		Brief definition
<b>Conforming/transforming action</b>	Conforming action	An action that is performed due to the influence of external pressures such as social norms and laws
	Transforming action	An action that is introduced to challenge the existing norms in a particular social setting
<b>Compulsory/optional action</b>	Compulsory action	An action that is performed mandatorily as it is ordered by a rule or law
	Optional action	An action that is performed voluntarily as it is bound to non-mandatory policies or unwritten social norms

The second category, minor new themes, consists of three pairs of pro-environmental actions: one-off/routine action, immediate/gradual action and new/resurfacing action. These themes have been classified as minor themes, not because they are in any way less important than the major themes discussed in the previous paragraph, but rather because they feature the influence of time. I suspect that these findings came to prominence as a result of the influence of the TTM and life history approach utilised in the analysis.

**Table 5.2** Minor new themes

Binary themes		Brief definition
<b>Immediate/gradual action</b>	Immediate action	An action that is performed as an immediate result of participation in ROEE.
	Gradual action	An action that is performed as a result of participating in ROEE, but at some time in the future.
<b>One-off/routine action</b>	One-off action	An action that is comparable with the stage of action of the TTM and is performed at least once.
	Routine action	An action that is performed regularly and overtly for more than six months. This action is also comparable with the stage of maintenance of the TTM.
<b>New/resurfacing action</b>	New action	An action that is performed for the first time.
	Resurfacing action	An action that is performed for the first time, after laying dormant for a long period.

Since **Chapter 4** has already presented findings that were framed by the influence of time, these minor themes that are also related to this influence (of time) are not presented in detail in this chapter. I now turn towards sections on the two major new themes and the four existing themes.

### **5.3.1.1 Major new binary theme 1: Conforming/transforming action**

According to my analysis, many of the research participants experienced environmental behaviour change when they moved into a new social setting that featured social norms which contrasted with those with which they were familiar. Bamberg and Möser (2007) argue that such a change in environmental behaviour may occur when people internalise certain social norms due to fear of social exclusion or feelings of guilt. Somewhat similarly, my findings show that social norms influence participants' environmental behaviour in two possible ways: by accepting a set of common practices due to the influence of external pressures from local social norms and laws; or by challenging the existing norms and practices within a given social setting due to one's personal convictions. In the current study, I have termed this first kind of action 'conforming action' and the second kind 'transforming action'.

Conforming environmental actions come about in two principal ways, both of which involve being immersed in a novel social setting: one is either influenced by the official policies and laws of a given governmental region or by the norms of one's social surroundings. Alia provided an example of the former situation. Alia had been living in Edinburgh for slightly more than three years at the time of the main study. Edinburgh, which is the capital city of Scotland, is bound by the Zero Waste Plan (The Scottish Government, 2010) that was launched by the Scottish Government in 2010. The policy sets out the vision for a zero waste society "where resource use is minimised, valuable resources are not disposed of in landfills, and most waste is sorted into separate streams for reprocessing, leaving only limited amounts of waste to go to residual waste treatment, including energy from waste facilities" (The Scottish Government, 2010, p. 3). In order to implement this policy, all citizens are urged to become involved in this plan. In this regard, stricter rules have been introduced, such as banning some types of waste from landfill sites to encourage their retention and reuse (The Scottish Government, 2010). The City Council of Edinburgh responded positively to this proposal through the development of facilities required to recycle. Recycling facilities have been provided in various places, yet they still provide a medium through their official website for people to order bins or recycling boxes, to request the collection of bulky waste items, and to assist people in finding a community recycling centre (The City of Edinburgh Council, 2016). Influenced by this policy, Alia explained, "the facilities are there... it makes me feel guilty if I don't

practise it". This extract indicates that environmental behaviour was changed to conform to government policies, which included public guidance and the presence of recycling facilities.

Izzah, who used to live in Putrajaya, provided another example of a situation in which conforming actions were performed as a result of the introduction of government policies. Putrajaya has been a Malaysian Federal Government Administrative Centre since 1993. It was designed as an intelligent 'city-in-a-garden' (Lim, 2013), where various green environmental programmes have been introduced. In 2010, the city was selected as one of two pioneer townships in green technology. In accordance with this programme, specific guidelines for citizens' green behaviour were provided (Ministry of Energy, Green Technology and Water, 2016), and the residents of Putrajaya were selected for a pilot project on solid-waste separation (The Star, 2009). The data show that the timeframe of the pilot project aligns directly with the time when Izzah began to recycle. According to her:

About a couple of years after I returned from the camp, the city council of Putrajaya provided recycling bins for every house in my neighbourhood. So that's it. Only then I was able to apply what I learned from the camp [the ROEE].

Despite what seems like a success story, Izzah's behaviour change on recycling did not last long, due to the discouraging attitudes of her family. Further explanation about this stagnation in one's newly adopted actions is explained later in **Section 5.3.2.2**. Additionally, it is interesting to note that this example is different from the example that Alia provided, in that Alia was conforming to an existing policy, while Izzah was conforming to a policy that was newly introduced.

The previous extracts provide examples of the influence of policies on conforming pro-environmental action. In another extract, Alia explained how she was influenced by her social group as well as existing policy.

Here [in Edinburgh] we know both the husband and wife of the [Malaysian] families. So, the activities that we do also involve all of the family members. But in Malaysia, we didn't meet our friends at home... My friends in Malaysia were those among my colleagues. We worked together in the office. The relationship was just as colleagues.

The above quote explains Alia's reason for going camping with other Malaysian families several times while in Edinburgh, but never in Malaysia. Thus, the quote explains how her environmental behaviour has changed as she distinguishes between herself as a member of the Malaysian community in Malaysia and the Malaysian community in Edinburgh — both of which feature different social norms. In Malaysia, Alia's friendships did not involve visiting each other's homes or travelling together.

These conforming actions that were performed by participants due to the change in their social environment may involve a shift in their social identity. According to Tajfel (1974, p. 69), social identity refers to "an individual's self-concept which derives from his [sic] knowledge of his [sic] membership of a social group (or groups) together with the emotional significance attached to that membership". Once people acknowledge their membership within a particular social community, there is a tendency for them to adopt and follow the norms of the community members, as they see things from the group's perspective (Forsyth, 2014; Stets & Burke, 2000; Tajfel, 1974).

The notion about identity above is similar to Mead's (1934) work on 'the self', which features a process by which the acts and attitudes of others become imported and internalised into the minds of individuals. As introduced in Chapter 4, the central idea of this explanation is also comparable to the ideas from Cialdini et al. (1991), Glynn et al. (1995), Johnson and Johnson (2009), and Stets and Burke (2000), who suggest that people use the group's opinions and goals as a reference to guide the construction of their own views (and consequently actions) on public issues, or on what is perceived as approved and disapproved behaviour.

According to foundational work in social psychology by Mead (1934), an individual's actions are likely to be unified with the generalised, collective beliefs held by their immediate social groups. This becomes more complex when individuals are members of multiple social groups (Forsyth, 2014; Levi, 2015) and must be capable of performing for disparate audiences (Goffman, 1959). These elements of theory explain how, when moving between social groups and conforming to their norms, a person's pro-environmental behaviour may vary greatly. Seen this way, individuals who have begun, stopped, and continued pro-environmental behaviour throughout their life histories can be seen as reflecting the collectively-held values of the groups of which they are a member. Thus, Dewey's (1938)

concept of continuity in environmental action can be directly related to social influences. This is clearly illustrated in the above explanation of Alia's two very different Malaysian communities – the one in Edinburgh and the one in Malaysia.

With regard to the converse part of this first major binary theme, transforming actions, my analysis suggests that this form of actions is performed under conditions whereby people feel strongly compelled to challenge conventional views on human/nature relationships. In other words, transforming actions are the result of a negotiation between personal identity and social identity. The concept of social identity has been discussed in preceding paragraphs. Personal identity encompasses an individual's exclusive qualities, beliefs and preference (Forsyth, 2014). The central priority of personal identity is one's own goals and desires (Stets & Burke, 2000), and these can be either independent from or dependent on the influences of a particular social group (Forsyth, 2014; Levi, 2015). The boundary between the personal and social self is fluid (Swann Jr. et al., 2012), and allows one to be influenced by one's immediate social group. Swann Jr. and colleagues note that people's personal agency may be channelled into group behaviours when the visceral feeling of oneness within a group is strong.

The conduct of transforming actions may or may not be intended to influence others. An example of transforming action that was not intended to influence others can be seen in an extract from the interview with Raju. With regard to the issue of unusually hot temperatures in Malaysia in early 2016, he explained,

It is very hot recently here in Malaysia. The temperature rose to 40 degrees. That is very unusual... I'm staying alone. I'm renting in Subang... The house is fully furnished. There's an air conditioner at home. But I don't use it. It's not good for our environment.

As a country located near the equator, the climate in Malaysia is hot and humid. The average daily temperature is between 23.7°C to 31.3°C, but the highest temperature recorded until 2009 was 36.9°C (Hussein, A. Rahman & Maria, 2009). In addition, modern Malaysia houses typically use heavy materials such as brick and concrete. According to Kubota, Chyee and Ahmad (2009), these materials have a high capacity to absorb and store heat energy. Consequently, it is also common for the households to own and use air-conditioners. The study conducted by Kubota et al. (2009, p. 831) reported that "air-conditioner ownership level is found to be 62%... almost all the households with air-

conditioners (99%) own ceiling fans". Contrary to widespread practice, Raju did not use his air conditioner, and this action can be regarded as an example of transforming action, as it features actions that run contrary to established ways of acting. In this example, Raju had no intention of influencing others, as he lived on his own.

On the other hand, Faizah provided an example of transforming action that was intended to influence others. At the time of the current study's exploratory interviews, Faizah was living in a rural area in Malaysia, where the socio-economic status of the community members was described as relatively poor.

The place where I teach is a pretty rural area. They don't have money to buy [learning aids]. So, I taught them how to make their own. We can reuse discarded materials... In fact, I also used discarded materials to make my teaching aids. The students were fascinated, so they actually applied what they learned from it to their daily lives.

As a teacher, Faizah hoped the students' socio-economic conditions would not be an obstacle to their learning. Therefore, she taught and encouraged her students to create their own learning aids to suit their conditions by setting an example through her own teaching. In doing so, Faizah sought to transform conventional views on how humans think about, and act in relation to, the local natural and social environment.

The idea of transforming action in some way indicates that a conflict of interest exists. Conflict of interest refers to a situation where there is a contradiction between the actions of individuals or groups, where each party tries to maximise their own needs and benefits. Conflicts of interest may also be due to differences in people's qualities, beliefs, and preferences (Forsyth, 2014; Johnson & Johnson, 2009). Given that transforming action in this study refers to actions that are performed to positively influence the environment and to strive towards sustainable development, my analysis suggests that being exposed to conflicting ideas can be regarded as necessary for learning and growth. As Casey-Campbell and Martens (2009) and Fisher (2012) argue, group conflict may have both positive and negative effects. For example, intergroup conflicts may be acknowledged as the source of social change and movement towards a better life for communities (Fisher, 2012). From this view, having attitudes and taking actions that stand in opposition to dominant cultural forces may be necessary if widespread, conventional social practices are detrimental to the natural environment and long-term sustainable development.

With reference to the literature on education for sustainable development (ESD), one can see that conforming action is comparable to the outcomes of transmissive education, which Jickling and Wals (2008) define as environmental behaviours that are performed to conform with the skills and values that are determined by others, such as governments, special-interest groups, or industry, which have preferred messages, agendas, ideologies, or consumer preferences. Conversely, transforming action is comparable to the outcomes of transformative education, which Ashley (2005), Bowler (2015), Jickling & Wals (2008), Scott (2009), and Tilbury (2009) suggest are the ideal outcome of ESD. According to Ashley (2005) and Jickling and Wals (2008), transformative education results in environmental behaviour that is produced from social construction that meets the needs of a particular social context. Additionally, transformative education involves developing the judgment to decide which environmental values are right or wrong in certain circumstances (Ashley, 2005). In contrast, the key processes of learning in, and the motivations behind, transmissive education have been considered as a form of indoctrination (Courtenay-Hall & Rogers, 2002; Dobson, 2007), where education becomes “an instrument for getting one’s ‘message’ into impressionable young minds – for implanting a particular agenda” (Jickling & Wals, 2008, p. 7). Despite the literature which strongly suggests that transformative education is ideal for eliciting pro-environmental actions, the findings of the current study suggest that conforming pressures from social groups and government policy can also be powerful influences. This idea was evidenced by the fact that many participants changed their environmental behaviour to conform to social norms, social groups or laws and policies.

This section analysed the first new binary theme of conforming/transforming action. To distinguish them from each other, their definitions and examples of extracts from participants’ interviews were provided. The next section discusses the second new binary theme, which is compulsory/optional action.

### **5.3.1.2 Major new binary theme 2: Compulsory/optional action**

The data suggest that pro-environmental actions that are driven by social norms are not necessarily compulsory. This idea is supported by Rimal and Lapinski (2015), who point out that: “Different from law, norms are socially negotiated and contextually dependent modes of conduct; laws are explicitly codified proscriptions that link violations with their

corresponding punitive measure” (Rimal & Lapinski, 2015, p. 394). This aligns with another major new binary theme emerging from my data which is also associated with social conditions, namely compulsory and optional action. I have defined compulsory action as pro-environmental actions that are performed to comply with certain laws, and where penalties may be applied to those who violate them. By contrast, optional pro-environmental actions that are not performed will not result in penalties. The performance of optional pro-environmental actions can be either voluntary, or occur as a result of external pressures, such as non-mandatory policies (e.g. Scotland’s Zero Waste Plan) or social norms (e.g. Malaysian friendship culture in Malaysia and in Edinburgh).

Many participants believe that their environmental actions could be more enduring if there was a law or policy reinforcing their conduct. Azhari, who has been active in environmental activities for a long time, also shared this belief. Answering a question relating to how he thinks his actions could be better, he explained, “I think policy is very important. If there’s a policy that mandates the action, everyone is going to do it”. Alia provided another example with regard to her camp experiences while living in Edinburgh:

When we were there, the campsite had its own rules. We couldn’t simply throw away the rubbish just anywhere. And we were not allowed to do open burning. In Malaysia, it was fine to have a campfire, but not here. They don’t allow us to do that here.

As explained in **Chapter 4**, an approach that uses specific regulations to promote pro-environmental actions can be considered a shallow ecology approach. This is because people may perform compulsory actions with or without engaging in deep questioning that may help them make sound judgements about what is ‘right’ and what is ‘wrong’. This questioning process, which invites one to consider the fundamental relationship between nature and humanity from an ethical position, characterises the concept of deep ecology (Drengson, 2008; Drengson et al., 2011; Naess, 1986; 2015), while, in contrast, the concept of shallow ecology involves superficial questioning with the primary aim of solving environmental problems instantly, through technical solutions and for the short-term (Drengson, 2008; Naess, 1986; 2015). My findings suggest, however, that a shallow ecology approach could be much more effective for changing environmental behaviour with members of the public. Analysis of the data revealed that many routinely performed pro-environmental actions are a direct result of complying with government laws and

policies. From a different perspective, laws and policies can be seen as the medium through which people are informed about which actions are right and which are wrong. This view concurs with Owens' (2000) position where he argues that this strategy informs lay people, who may not understand the complexities of environmental science and pro-environmental practices as recommended by expert institutions.

Faizah's example of her teaching practice that integrates environmental education demonstrates the theme of optional action, particularly when it is driven by a non-mandatory policy. Environmental education in Malaysia has been carried forward by the Ministry of Education (MOE) by encouraging teachers to integrate it across the curriculum. Unless there is a specific topic within a specific curriculum (i.e. Biology, Science, Geography), the choice of whether to integrate environmental education or not rests with the teachers. As a consequence of such loose enforcement, environmental education in formal classrooms is therefore usually implemented only by interested subject teachers (Aminrad et al., 2012). Faizah, who teaches Malay language and History in a primary school, explained:

Yes, there is a policy that encourages us to integrate environmental education in our teaching... As a teacher, I teach my students [about the environment]. I integrate environmental values. For example, I told them that as a human being we should care about the environment. I taught them about global warming.

Faizah's decision to integrate environmental education into her teaching is an example of an optional action because it is not mandatory for the subject that she teaches. This is another example of an action that can be interpreted by more than one binary theme. In the previous section, Faizah's teaching of environmental education was discussed from the perspective of conforming/transforming action.

In contrast to the two examples provided in the previous paragraphs, the data also show that some people are not well informed about environmental laws and whether a particular environmental action is compulsory or optional. For example, Halina implied that her action of recycling in Switzerland was influenced by the social norms of the Swiss (see the extracts on p. 161-162). In the extracts, she explained that the action of recycling in the country is a social norm that she could choose not to obey. During the course of my analysis, it became clear that her statement contradicts those found in the environmental policies of

Switzerland. There is a section within the Swiss ordinances regarding regulations on the issue of waste management indicating that there are penalties for those who violate the rules (Froriep, 2015/16; Kaufmann-Hayoz & Mauch, 2001). One interpretation of this finding is that, as an immigrant, Halina was not fully informed about the local legislation. Despite not knowing about any environmental laws, the law that she perceived as a social norm was enough to make her recycle.

Similarly to the section on conforming/transforming action, this section presented the definition and examples of extracts from participant interviews to explain the second new binary themes introduced in this study, which is compulsory/optional action. Having discussed these two binary themes, I will now discuss the findings on existing binary themes.

### 5.3.2 Existing binary themes

Now that I have explained the two new major themes, I will turn my attention to the data relating directly to four binary themes that exist in the literature. They are: direct/indirect actions (Henriksson, 2011; Kollmuss & Agyeman, 2002), public/private-sphere actions (Stern et al., 1999; Stern, 2000), activist/non-activist actions (Stern et al., 1999; Stern, 2000), and biospheric-oriented/anthropocentric-oriented action (Amérigo, et al. 2007, Koprina, 2014; Ojea & Loureiro, 2007).

**Table 5.3** Existing binary themes

Binary themes		Brief definition
<b>Public/private action</b>	Public action	An action that is performed in a group
	Private action	An action that is performed individually without involving other people
<b>Direct/indirect action</b>	Direct action	An action that is performed first-hand to contribute to solving environmental problems
	Indirect action	An action that is performed to influence other people or structures in society to contribute to solving environmental problems
<b>Activist/non-activist action</b>	Activist action	An action that is performed through a substantial commitment of involvement in environmental organisations
	Non-activist action	An action that is performed without a substantial commitment of involvement in environmental organisations

<b>Biospheric-oriented/ anthropocentric- oriented action</b>	Biospheric-oriented action	Actions performed with concerns about the perceived costs and benefits for the ecosystem
	Anthropocentric oriented action	Actions performed with concerns about the perceived costs and benefits for humanity

The themes of public/private action, direct/indirect action, and activist/non-activist action are situationally related, while that of biospheric-oriented/anthropocentric-oriented is more psychologically related.

### **5.3.2.1 Existing binary theme 1: Direct/indirect action**

One may argue that the activity of camping, which was reported by Alia earlier in the chapter, is irrelevant to environmental conservation. However, in this study, camping may be considered as an indirect pro-environmental action. In the next paragraph, the concept of direct and indirect pro-environmental action that has been used in the existing literature is presented, followed by an explanation of my revised conception of the two new forms of the actions.

Henriksson (2011) and Kollmuss and Agyeman (2002) distinguish direct action from indirect action based on whether the action is performed through first-hand or second-hand involvement in environmental conservation, or whether there is a mediator present between the actor and the impact of action on environmental conservation. According to them, direct pro-environmental actions are the actions that are performed first-hand, and have a direct impact, however small, on the environment (i.e. recycling, driving less, buying organic food) (Henriksson, 2011; Kollmuss & Agyeman, 2002). Indirect action, as highlighted by Henriksson (2011, p. 2), is “voluntary and intentional action targeted at influencing other people or structures in society in order to decrease the impact on the environment”. Examples of indirect actions include donating money, political activities, educational outreach and environmental writing (Kollmuss & Agyeman, 2002). Courtenay-Hall and Rogers (2002) argue that Henriksson’s (2011) and Kollmuss and Agyeman’s (2002) concept of direct and indirect action are class-biased. According to Courtenay-Hall and Rogers (2002), based on income, different people have different abilities or opportunities to

perform particular actions. For example, some people may not be able to afford to buy organic food due to financial constraints (Courtenay-Hall & Rogers, 2002).

It was evident in my analysis that the concept of direct and indirect pro-environmental action can be viewed from another dimension, and that is that direct and indirect actions are subjective and individually relative. According to my findings, direct and indirect action can also be distinguished based on the clarity of the intentions of the actions performed, that is, whether the purpose to conserve the environment was intentional or unintentional. When the activity is performed with an intention to conserve the environment, the action is considered as direct action, and vice versa. Based on this definition, it becomes clear that actions such as recycling and reusing shopping bags are examples of direct action, and that Alia's forest walk was an example of an indirect action.

When we were at the campsite, we also went into the forest. It was not that we went there [into the forest] purposely to learn about the environment. But it happened naturally. We somehow learned new things, such as about trees.

This extract indicates that the reason Alia went camping was not related to protecting or conserving the environment. However, without realising it, interacting with the environment and possibly learning about it may have become a secondary outcome of her interactions with it. In Alia's case, the knowledge that she gained may not be sufficient for promoting the protection of the environment; however, since one may gain knowledge from activities that are leisure-based rather than educationally-driven, it is arguable that in certain conditions, this forest walk may be considered as an indirect pro-environmental action. It is acknowledged by many scholars that environmental knowledge is the foundation for changing environmental behaviour (see for example, Bögeholz, 2006; Hines et al., 1987; Bamberg & Möser, 2007). Although Jensen (2002; 2004) and Frick et al. (2004) suggest that there are specific types of knowledge required for changing environmental behaviour, the fact that it is possible for people to learn about the environment from recreational activities is noteworthy. Therefore, the current study proposes that indirect action can be defined as an action that is not intentionally performed to protect the environment, but which elicits a similar outcome.

In their article on the diversity of pro-environmental factors, Kollmuss and Agyeman (2002) suggest that educational outreach is an indirect action. However, based on my analysis, this

is not necessarily the case. In the extract from the interview with Faizah in **Section 5.3.1.1** on p. 216, her efforts to teach her students about the environment were intentional and can be considered direct action. This lies in contrast to Raju's experience:

I brought two of my friends trekking in the rainforest... Of course we didn't go there to conserve the environment or whatnot... [While trekking] I asked them "there's a shortcut for the trail. Is it good or bad?" They said it's good... Then I told them, "No. Forest management wise, any management, cutting corners is not good. It can damage the pathways... animals' pathways.

It is clear from this quote that teaching others about the environment can also be unintentional, as knowledge sharing can occur in unplanned, inadvertent ways. Thus, according to the revised binary themes of direct and indirect action that I proposed in this study, Raju's action of teaching his friends about the environment can also be considered an indirect pro-environmental action.

This section not only presented the original definitions of the existing binary theme of direct/indirect action, but drew on the current study's data to extend these definitions to include one's intention to perform a certain pro-environmental action – whether the purpose to conserve the environment was intentional or unintentional. I now turn to the second existing binary theme of public/private-sphere action.

### **5.3.2.2 Existing binary theme 2: Public/private-sphere action**

There are a number of studies (e.g. Barry, 2006; Chawla & Cushing, 2007; Short, 2009) that have discussed public and private sphere actions since Stern (2000) began the debate about the features that distinguish these two forms of pro-environmental actions. According to Chawla and Cushing (2007), public-sphere actions are those actions that occur in the public arena, while private-sphere actions refer to action in the home. This section concentrates on the participants' experiences in relation to the private/public dichotomy.

The difference between their potential benefits for the environment is the main concern discussed in the literature where, according to Chawla and Cushing (2007) and Stern (2000), public-sphere actions can be more effective than private-sphere actions. In previous studies, private-sphere actions performed individually are thought to become environmentally

significant only when the actions are performed collectively – either by many people independently performing the same action, or through individual actions being performed repetitively (Chawla & Cushing, 2007; Gardner & Stern, 2002; Stern, 2000). Public-sphere actions are believed to be more effective as they are more likely to apply pressure to the government and industries to act for the common good, and thus have the power to influence the environment significantly (Chawla & Cushing, 2007; Gardner & Stern, 2002; Stern, 2000). Chawla and Cushing (2007) note that governments and businesses are especially powerful, since they heavily influence consumer products and action. For example, manufacturers can decide to produce (or not produce) energy efficient cars, or provide (or not provide) efficient public transportation to the masses (Chawla & Cushing, 2007).

This notion concerning the effectiveness of public-sphere action in influencing the government was supported by Khairul's views. Khairul made an effort to collaborate with non-governmental organisations (NGOs) and, with his wife who works in a public university, to conduct research and provide an educational outreach programme which focused on preserving the quality of local rainforests in collaboration with indigenous people in Selangor. To achieve greater impact, they involved the national government in these projects. Khairul explained his situation:

My wife teaches at the faculty of architecture and built environment at a public university – built environment is related to eco-green and sustainability... Through her profession, my wife and I are involved in an environmental project with indigenous community... we collaborate with NGOs, we got support from Tan Sri Rais Yatim [who was a politician at the time] for our project...

Khairul's strategy of conducting public-sphere action did not manage to have an impact on national policy, which Chawla and Cushing (2007) believe is possible. However, his actions enabled him to ensure the government's involvement in his project, as they provided funding to support the research and the educational outreach programme.

There are notable findings in this study with regard to private-sphere actions that are not raised in previous studies. Private-sphere actions were found to be equally difficult for some participants as a result of family hierarchies. Indeed, performing pro-environmental actions at home may not be easy, as this requires cooperation from family members – not

least from the head of the family. In the Malaysian culture, the head of the family (usually an older male who is also the household breadwinner) has a notable influence on what goes on in the home, and it is not uncommon for young children only to speak when given permission. With regard to the family culture of the three main ethnicities in Malaysia (i.e. Malay, Chinese and Indian), Keshavarz and Baharudin (2009, p. 70) explain:

In Malay culture, parents have very important roles in directing the children toward the right behaviour and attitude... Malay parents are regarded as clear authority figures and are obeyed without question... [Chinese] parents treat older children in a harsh and strict manner and also expect them to control their emotions and impulses. Beginning around middle childhood and early adolescence children encounter some difficulties and conflicts with their parent's increasing expectations towards them... Indian parents tend to stress on respect, obedience.

This culture within Malaysian families, especially with regard to respect and obedience, is so influential that it has the capacity to enable or constrain a family's attitudes and actions towards the natural environment. This can work both ways and depends largely on the head of the family's position.

An extract from Izzah's interview describes a situation in which Malaysian family culture hindered change in her environmental behaviour: "My family still simply threw away the household waste, mixing them regardless of whether they were recyclable or not". This extract is a continuation of her explanation about her recycling behaviour a couple of years after participating in ROEE, which was influenced by the availability of recycling facilities in her neighbourhood in Putrajaya. Izzah was approximately 17 years old at that time. Perhaps because she was still living with her parents (who did not practise recycling) at that time, she was discouraged from continuing to recycle. Izzah wanted to engage in pro-environmental behaviours, but as a result of the socio-cultural arrangements in her home life, was unable to. According to the TTM, this discouragement could be due to a lack of self-efficacy, which may have helped her to change her efforts, thoughts, and emotions (Prochaska & Velicer, 1997; Prochaska & DiClemente, 1982; Velicer, et al., 1990). Self-efficacy has been defined by Wood and Bandura (1989) as one's belief in their own ability to conduct an action that will make a certain change. Therefore, by saying that Izzah lacks self-efficacy, I am speculating that she perceives that her individual action of recycling will not make any improvement to the natural environment. It is also possible, however, that

Izzah did have strong self-efficacy, but not enough to overcome the constraining influence of the rest of her family, who did not believe in recycling.

By comparison, Azhari and Borhan, who are the heads of their families, were able to perform pro-environmental actions at home without any problems. Borhan's explanation on this matter can be referred to in the extract in **Section 4.5.4** on p. 180, and Azhari explained, "At home, we collect rainwater... in a separate water tank for family use". In their roles as head of the family, Azhari and Borhan were able to perform private-sphere actions to such an extent that this influenced the actions of all of the family members under their care.

This section has focussed on public/private-sphere action, and has paid particular attention to the ways in which Malaysian home life may constrain or enable pro-environmental attitudes and practices. The following section concentrates on the third existing binary theme of activist/non-activist action.

### **5.3.2.3 Existing binary theme 3: Activist/Non-activist action**

All participants in this study have engaged in some form of pro-environmental action; for some it was mandated by their job and for others it was a personal choice. While pro-environmental actions performed as part of one's job can be directly relevant to activist action, actions performed due to personal choice can be considered as either activist or non-activist action. In the literature, activist action is defined as environmental practices adopted by those who are actively committed to environmental public actions to influence the public policies and the behaviour of the broader population (Stern et al., 1999; Stern, 2000). Non-activist actions are those performed by members of the public through citizenship actions that accept, support, and act on public policies, even at some personal cost (Stern et al., 1999). More succinctly, activist action features "active involvement in environmental organizations and demonstrations", while non-activist action involves "stated approval of environmental regulations, willingness to pay higher taxes for environmental protection" (Stern, 2000, p. 409).

Among the participants who participated in the main study interviews, two of them – Azhari and Borhan – work with environmental organisations. In this case, their professional affiliations provided a context that allowed them to perform environmental activist actions (Hounsell, 1984). Environmental conservation is the principal aim of these organisations. As described in **Chapter 4**, group goals direct and motivate the members of groups to perform planned and coordinated actions or behaviours (Johnson & Johnson, 2009), and the collective actions among group members amplify the impact of their actions (Forsyth, 2014; Johnson & Johnson, 2009; Levi, 2015).

Activist action is not however limited to those who work with environmental organisations. Izzah is a law student in a university and her area of study is not directly related to environmental matters. Despite this, she reported that she was a member of several environmental associations at her university and in public communities. Her involvement in the associations provided opportunities for her to conduct various environmental activist actions.

In university, I joined the Environmental Law and Awareness Club... There were several projects that we did for the club. We made a newsletter... we organised an environmental awareness week.

The quote above shows how Izzah performed environmental activist actions through her club memberships. These educational outreach activities in turn influenced other people. This finding supports Quintelier's (2008) notion that voluntary memberships in associations can be vital in creating a certain vision of society, for example as individuals become involved with organisations that seek to influence environmental policy. Importantly, the starting point for Izzah's participation in these environmental associations was, in part, the result of her participation in the ROEE course that she attended in school several years earlier:

When I returned from the camp, I became more interested in the environment... I wanted to join environmental activities actively. However, I didn't really have a chance [to take part in environmental activities]. We didn't have environmental societies at school... So, at university, I grabbed all the opportunities.

According to Izzah, the ROEE course that she attended had sparked her interest in the environment to such an extent that she wanted to be more actively involved in

environmental conservation activities. However, the limited availability of opportunities constrained Izzah's intentions to take pro-environmental action. Her plan to perform environmental activist actions was only fulfilled when she was affiliated with the university where she studied which provided opportunities through various environmental associations.

Besides Izzah, Khairul and Raju were the other participants who had experiences of performing environmental activist action. Interviews with them indicated that social networks were central to encouraging their participation in this type of action. The extract explaining this effect on Raju was presented in his vignette in **Section 4.6.4**, as he described how he became involved in research projects with his acquaintance from the Malaysia campus of the University of Nottingham.

For Khairul, the extract on p. 224 in the section on **public/private-sphere action** highlights the importance of social networks for his personal environmental activist action. Khairul had already become involved in environmental activities when he was working in the military, where his professional affiliation was the principal driver for his participation in those activities. As explained in the extract, Khairul became involved in environmental activist action by supporting his wife in environmental projects, which included seeking and obtaining funding from the government for one particular initiative. This finding differs from those of Quintelier's (2008) study, however. Unlike in Quintelier's study, which found that membership of voluntary organisations or activities encouraged people to engage in politics, I did not find any evidence of this in Khairul's case. Khairul's example suggests that one does not have to be part of a membership organisation to attract governmental interest and support. These findings also support work by Stern et al. (1999) and Stern (2000), which claim that it is possible for environmental activism to influence public policy through citizen's actions.

Faizah's action of integrating environmental education into her teaching is an example of non-activist action (refer to the extract on p. 219). Although the action was not meant to influence public policies, her intention to influence the behaviour of a broader population (i.e. her students) fits with the concept of non-activist action that is discussed by Stern et al. (1999). Without participating in any environmental organisations, she carried out this action in her teaching through actively supporting the policy proposed by The Centre of

Curriculum Development Malaysia (1998). As noted earlier, this policy encourages teachers to integrate environmental education into their teaching across all curricular areas, regardless of whether or not the subjects are directly related to the environment (The Centre of Curriculum Development Malaysia, 1998). Again, this is another example of one's actions being viewed from more than one binary perspective. Earlier in this chapter, Faizah's action in teaching environmental education was discussed as a transforming and an optional action.

#### **5.3.2.4 Existing binary theme 4: Biospheric-oriented/Anthropocentric-oriented action**

Biospheric-oriented and anthropocentric-oriented actions have together been one of the most hotly debated topics in the literature on ESD, and key debates were presented earlier in **Section 2.4.1**. In addition, this binary theme is discussed within the context of attitudinal factors in the literature of environmental behaviour model (see **Section 2.6.1.2**). Reference to biospheric-oriented/anthropocentric-oriented actions is also made in **Chapter 4**, where they were discussed in the vignettes of Borhan and Felix. The prevalence of this theme suggests that it should be discussed more extensively in this chapter.

Biospheric-oriented action refers to how one's motivation to conduct pro-environmental actions is due to perceived costs and benefits for the ecosystem, whereas anthropocentric-oriented action relates to how one may perceive costs and benefits for humanity with little regard to their ecological context (De Groot & Steg, 2008; Lee, 2011; Schultz, 2001; Stern, 2000). For example, car-pooling for environmental benefit can be labelled as biospheric-oriented action, whereas car-pooling for financial benefit refers to anthropocentric-oriented action. I now interrogate this biospheric/anthropocentric binary in greater depth.

One of the issues presented in **Section 2.4.1** is how the plurality of the concept of ESD has caused researchers and practitioners to have very different ideas regarding what actions are right and what are wrong in a particular circumstance (Drengson, 2008; Kopnina, 2011; 2012b; Naess, 2015; Rolston, 1991). Inspired by Naess' (1973) concept of deep ecology, they (e.g. Amérigo, et al., 2007; de Groot & Steg, 2008; Ojea & Loureiro, 2007) question whether biospheric and anthropocentric values are polar opposites that sit at either end of a continuum, with opposing ethical stances. While this issue has been debated among

researchers (e.g. Drengson, 2008; Drengson et al., 2011; Kober, 2013; Kopnina, 2011; 2012b), it is not surprising that the non-expert participants in this study at times appeared to be unable to fully understand and explain how ethical their own environmental actions were. For example, Kefli who participated only in the exploratory interview, reported that once he returned from the ROEE, he shared his newly acquired knowledge of mangroves with his friends. According to him, this action was performed due to his concern about the environment. Interestingly, his account of what he had done out of his sense of responsibility towards the environment indicates an element of anthropocentrism since he perceived the environment from an instrumental perspective:

I shared with the other members of the school's environmental society about how to make fabric dye out of mangrove plants... It [making fabric dye] is a way [for human] to survive by using our creativity... People especially those who are living in the rural area can sell them to improve their economy. They are close to the mangrove swamp. There are a lot of resources.

Kefli's explanation of his action orientation is tentative and perhaps not fully conscious. It could be argued that he did perceive the environment from an anthropocentric perspective that acknowledges an egalitarian and symbiotic relationship between humans and the environment. However, there is no evidence from research data to confirm this postulation.

In contrast, Azhari provided a clear example of how lay people confuse which actions are more ethical than others, or which actions are wrong or right in certain circumstances. While working as an environmental education consultant and provider, Azhari was often asked by the participants in the courses which he organised about this dilemma. In his own words, he explained: 'when I brought the public into such a course, there were always people who would ask questions such as "if we don't explore the jungle, how are we supposed to develop the city?'. In his opinion, people's ideas and beliefs about biospheric or anthropocentric-oriented actions are influenced by their personal interests:

Some people look at one thing from different perspectives. For example, those [participants of Azhari's Environmental Education courses] who work at developing companies said that many of these group of developers, they don't care about the environment. What they care is they need to develop [urbanisation], and they need money.

Subsequently, Azhari said he would usually design his environmental education courses based on the profiles and interests of his prospective participants. This process, he explained, provided him with insights that would help him raise environmental awareness amongst his participants. He did this through a kind of 'deep questioning' of their reflections about mainstream and personal values, beliefs, and practices, and by considering the fundamental relationship between nature and humanity as the basis from which to make choices on courses of action (Drengson, 2008; Drengson et al., 2011; Naess, 1986; 2015).

This initiative taken by Azhari in designing his courses reflects Cocks and Simpson's (2015) guidance. While they argue that the orientation of action may not be important as long as people perform pro-environmental actions, Cocks and Simpson (2015) go on to suggest that interventions for changing one's environmental behaviour should attract people's intellectual and emotional interest. Getting participants involved in activities that they perceive as meaningful is crucially important, regardless of whether the activities are biospherically or anthropocentrically informed (Cocks & Simpson, 2015). Irrespective of participants' ages, a process of facilitating their questioning of their personal and professional values, beliefs and practices about their relationship with the natural world, has resonance with the basic tenets of deep ecology (e.g. Naess, 1986).

One additional piece of interest in relation to the biospheric/anthropocentric binary theme is participant age. The analysis of Borhan's vignette, suggests that younger people may have less interest in performing biospheric actions, a view supported by the findings of Casey and Scott's (2006) study. However, these findings, taken together, contrast with another finding from my data-set: when they were younger, there were three participants who performed anthropocentric actions but five participants who performed biospheric actions. For example, Izzah's participation in ROEE, her short practice of recycling after returning from ROEE, and her participation in environmental-related associations in university which I have explained in **Sections 5.3.1.1, 5.3.2.2 and 5.3.2.3**, were reported to have been driven by her interest in, and concern for, the environment. This finding suggests that the relationship between age and propensity for an anthropocentric or biospheric orientation of action is unclear. Therefore, the ROEE organisers should not take it for granted that students will always feel more attracted to anthropocentric gain. The uncertainty concerning the young participants' interests reinforces the recommendation

that ROEEs should be co-designed and co-led by the instructors and the participants (Kendall & Roger, 2015). This is consistent with educational literature arguing that participants' prior experiences and interests should be given due consideration when designing educational experiences (see for example, Dewey, 1938; Ord & Leather, 2011).

#### **5.4 Chapter summary**

This chapter has presented the findings from the thematic analysis, which employed inductive, deductive and abductive reasoning to interrogate the dataset. While the analysis of the data was framed by life history research and the Transtheoretical model (TTM), and findings emerged from this analysis, the current chapter's thematic analysis identified various binary forms in which one can perform pro-environmental actions. The themes that emerged inductively were categorised as new binary themes, and those that emerged deductively were categorised as existing binary themes. The new themes were divided into two smaller categories: major and minor. The decision to divide this category into major and minor themes was made in order to highlight findings that complemented those presented in the vignettes in **Chapter 4**.

The major new binary themes indicate that the community in which we live and governmental laws are the main factors that determine the diverse forms of pro-environmental action that individuals perform. The community in which we live seems to influence individuals' environmental behaviour in a way that causes individuals to either conform to the group's general perspective (Forsyth, 2014; Stets & Burke, 2000; Tajfel, 1974) or challenge its norms of environmental behaviour. Laws were perceived as another important factor that influences how people perform pro-environmental actions. However, the findings indicate that there are participants who are not well informed about the law, and instead follow the actions of those around them rather than consciously adhering to an official policy. In addition, it is also very apparent that the findings regarding these binary themes are related to an individual's personal and social identity.

My findings contribute to the existing research in a number of ways. First, I have proposed a new dimension for defining direct/indirect action, which differs from how this has been conceptualised in previous studies. While the previous studies define direct/indirect action

in terms of whether, and the extent to which, the pro-environmental action is performed first-hand or second-hand, this study shows that direct/indirect action can also be differentiated by whether or not the action is performed intentionally. Second, the current definition of public/private-sphere action has been extended to include a discussion of family culture in Malaysia. The heightened culture of respect and obedience in family hierarchies appears either to significantly enable or constrain family members' capacities to think and act in pro-environmental ways. Third, the analysis of activist/non-activist action suggests that there is no need to work with an environmental organization to perform activist action. Instead, activist action also can be performed through individual personal practice. Additionally, while activist/non-activist action could be viewed as similar to conforming/transforming action, there is a difference between the two binary themes especially between activist and transforming action. An activist action could be a transforming action, but a transforming action may or may not be an activist action. Fourth, the findings on biocentric-oriented/anthropocentric oriented action have led to practical suggestions for how ROEEs could be carried out to promote environmental behaviour change, such as deep questioning of participants' personal and professional values.

Having presented a thematic analysis from both within individual interviews and across the set of interview transcripts, the next chapter will merge key points from both findings chapters, while drawing on discourses on environmental education, environmental behaviour change and education for sustainable development – all of which were presented in the **Review of Literature** chapter.

## Chapter 6 DISCUSSION AND CONCLUSIONS

### 6.1 Chapter overview

The previous chapters have presented the journey I went through when conducting this research. This final chapter brings together the thesis's constituent parts and considers them as a whole. This chapter begins with a brief summary of the entire investigation, then provides answers to each research question. Next, the discussion outlines the study's main contributions to knowledge, both to the empirical environmental education literature and to the use of methodological approaches which have been used in previous research studies. Attention then turns to the implications of the findings for policy and practice. Finally, the study's limitations are discussed and suggestions for further research are proposed.

### 6.2 Research summary

In Malaysia, environmental education has existed for approximately 30 years, and Residential Outdoor Environmental Education (ROEE) courses have become a common way of supplementing environmental education in the formal curriculum. Detailed examination of websites and email requests for information at the beginning of this study found that many government agencies and non-government organisations (NGOs) provide these residential programmes to school students. A concern regarding these courses is that there is a lack of literature which reports on the learning approaches that have been adopted by course organisers and instructors. ROEE courses in Malaysia commonly take place in locations that are ecologically, socially and geographically unfamiliar to the participants. However, only two studies have investigated the effectiveness and impact of these courses. Having identified these gaps (i.e. the lack of empirical studies, despite the relatively long history of environmental education practice in Malaysia, together with the lack of specific details on pedagogical approaches adopted in ROEE courses), understanding the effectiveness of Malaysian ROEE courses was deemed necessary. Thus, the overriding purpose of this study was to investigate how ROEE courses that transported participants to

unfamiliar locations have shaped the subsequent environmental attitudes and behaviours of the participants.

To accomplish this goal, an extensive body of literature was reviewed critically and a rigorous documentary analysis was conducted in order to deeply understand the current state of knowledge surrounding ROEE. The literature was organised under three key themes, namely Education for Sustainable Development (ESD), continuity of experience and environmental behaviour change. According to the findings of this study, environmental behaviour is largely socially influenced, with social conditions being especially fluid and dynamic in nature. Paradoxically, despite the extensive literature on environmental behaviour change, most of the existing models adopt psychological perspectives. Additionally, many empirical studies on environmental behaviour change adopt cross-sectional rather than longitudinal approaches.

In the course of reviewing the literature gaps were identified which led to the two key research questions which were used to guide this inquiry:

- i. What are the influences of ROEE courses on participants' environmental attitudes and behaviours?
- ii. How do participants' life experiences since the ROEE courses shape their environmental attitudes and behaviours?

In order to answer these research questions, constructivist grounded theory, the life history approach and the Transtheoretical Model (TTM) were adopted to frame the methodological approach. In particular, constructivist grounded theory informed the decision to collect research data in four separate though closely interlinked phases: a documentary analysis; a survey questionnaire; exploratory interviews; and, finally, the main study interviews. This was largely a sequential process, whereby each of the earlier phases informed the methodological decisions of the subsequent phase. The life history approach was used in the final phase (i.e. main study interviews), whilst the TTM was used throughout as an analytical framework. This was because the TTM has considerable theoretical currency, and offers a holistic framework that features both psychological and social perspectives. In addition, the TTM does not assume that one-off experiences are

likely to result in lasting change, but rather provides a framework that allows connections to be made over a continuity of experiences throughout people's lifespans.

Eleven former participants in ROEE courses in Malaysia participated in both the exploratory and the main interviews. The time that had passed after they had completed their programmes varied greatly, with the most recent ROEE experience being three months before the date of the exploratory interview, and the most distant being 31 years in the past.

The findings of this study were presented in **Chapters 4 and 5**, following fine-grained analysis of the data collected from the exploratory interviews and the main study interviews respectively. The interview data were analysed using inductive, deductive and abductive reasoning. As a result, the study successfully addressed its aims by answering both research questions and shedding light on what, to date, has been an under-investigated area in Malaysia. Findings revealed that ROEE courses are not the primary events or interventions in individuals' lives that account for what they report to be their most important environmental behaviour changes. Rather, environmental behaviour change usually occurs later in life – especially through experiences that involve being heavily influenced by the law, policies and the norms of certain social groups. The data show that it is because of these influential life events that participants perform various pro-environmental actions to varying degrees, under two major binary forms (i.e. conforming/transforming action and compulsory/optional action).

Findings from this study have contributed to knowledge in the field in three ways: an innovative methodology has been adopted; implications for ROEE policy and practice have been delineated; and suggestions for future research have been proposed. Each is discussed in the sections which follow.

### **6.3 Answering the research questions**

The central questions in this thesis ask: *What are the influences of ROEE courses on participants' environmental attitudes and behaviours?*; and *How do participants' life experiences since the ROEE courses shape their environmental attitudes and behaviours?*

While these key research questions have been addressed in full in **Chapters 4 and 5**, a summary of these findings is presented in the following section.

### **6.3.1 Research Question 1: What are the influences of ROEE courses on participants' environmental attitudes and behaviours?**

While this section aims to answer the research question above, it is important to note that the point of departure is the value of Malaysian ROEE, which this study believed would be a useful instrument to supplement environmental education and ESD which are arguably marginalised, if not neglected, in schools. In Malaysia, the aim of environmental education is to promote the development of environmental knowledge, awareness, attitudes, skills and participation in environmental actions for gearing towards sustainable development (Centre of Curriculum Development, 1998; Malaysian Department of Environmental & the Centre for Environment and Development of the National University of Malaysia, 2004; Yusoff, 2003). On the other hand, the purpose and desired outcomes of ESD are to promote a change in behaviour based on decisions made as a result of concerns about the environment and through a reflective self-determination procedure (Courtenay-Hall & Rogers, 2002; Jickling & Wals, 2008). Being able to engage in this reflective process is likely to encourage participants to make proper judgements and decisions about which environmental values are right or wrong in certain circumstances, and to explore more contextual pathways towards a better world through more sustainable ways of living (Ashley, 2005; Courtenay-Hall & Rogers, 2002; Jickling & Wals, 2008; Vare & Scott, 2007). Following the literature that recounts how changing one's behaviours can take quite some time, the answer to the first research question is based on the analysis of data and findings on the immediate and, crucially, the long-term influences of ROEE courses.

At the beginning of this thesis, I discussed how the learning approaches adopted in Malaysian ROEE often take place within one-off events, and are separate from participants' social and physical environmental routines and from learning in school. Interestingly, analysis of the data reveals that such ROEE courses were influential for some participants in shaping their environmental attitudes and behaviours. However, these influences were not especially significant as the changes were not sustained over time. This finding was confirmed through analysing a combination of the data from the exploratory interviews

and the main study interviews, the main points of which were presented in the form of vignettes. The four vignettes presented in **Chapter 4** describe the life journeys of four participants since they had attended ROEE courses. These vignettes were selected because they illustrate four different patterns of environmental behaviour change, which I termed under the personal labels of a 'relapser', a 'maintainer', a 'transcender' and a 'non-changer'. From the four vignettes, three participants – the relapser, the maintainer and the non-changer – claimed that environmental learning gained during the ROEE courses they attended had led to subsequent changes in their environmental attitudes and/or behaviours.

A key element of ROEE courses that appeared to foster positive participant outcomes is the actual content of these courses. The positive outcomes for two participants in particular – the gardener and the one who practised recycling – were the result of increased environmental knowledge (from participation in the ROEE), which the literature suggests is important for fostering pro-environmental action. As a direct result of acquiring knowledge from his ROEE course, the gardener who used to perform his pro-environmental actions on the basis of an anthropocentric value orientation, described how after he attended the ROEE, his motivation became biospheric oriented due to his awareness of deforestation. This behaviour can be explained with reference to the TTM's process of environmental re-evaluation, which refers to individuals assessing how their problem or issue affects the physical environment (Prochaska et al., 1992). The gardener's change in environmental behaviour, however, was not sustained.

In contrast to the gardener, the participant who practised recycling was motivated by egoistic gain, as the environmental knowledge he had acquired engaged him in the processes of consciousness-raising and of self-re-evaluation. The process of consciousness-raising refers to learning new facts, ideas and tips that support the behavioural change, while the process of self-re-evaluation is the process by which individuals assess how they feel and think about themselves with respect to their current behaviour (Prochaska et al., 1992). While the latter process is anthropocentric oriented, the process of consciousness-raising was also gained using a similar approach. These findings indicate that courses that adopt a shallow ecology approach, with short-term and quick technical solutions, are not ideal for transformative approaches to environmental education (see Drengson, 2008; Naess, 2015; Bowler, 2015; Scott, 2009). Although this participant had been able to sustain

this behaviour from his ROEE course until the main interview, his longer-term behaviour change can be attributed to other external reasons.

The findings associated with unsustained changes and non-changing behaviour profit from the importance that Dewey (1938) places on continuity of experience. The social environment that the participants experienced after the ROEE courses (both within and outwith the school) were discouraging and did not complement the learning that the participants experienced during their time on the residential. In addition, the ROEE courses were always one-off experiences, which overlooked participants' potential agency for co-designing and co-leading future course with their teachers, and therefore had very little authenticity (see Beames & Brown, 2016), since they were so disconnected from the teaching and learning in school and from the participants' daily environments. All of these criteria lie in contrast to the strategies that were suggested by Kendall and Roger (2015), who highlighted effective approaches for enhancing participants' learning before, within and after residential. Although the ROEE courses that the participants participated in met one or more strategies for continuity of experience that Kendall and Roger (2015) suggest (i.e. providing new and memorable experiences, and embedding within the existing formal curriculum), the ROEE courses were unable to elicit significant changes in participants' environmental behaviour.

In sum, the impact of ROEE courses on my 11 participants cannot be characterised as significant enough to change their environmental attitudes and behaviour. It is arguable that the underlying problems of ROEE courses in Malaysia stem from inconsistencies between theory and practice. While theories suggest that ROEEs should encourage continuity of experiences and adopt biospheric-oriented and transformative approaches, evidence of these are all but absent in my data. Further, ROEEs cannot be magically transformed by adopting only one or two strategies from 'Brilliant Residentials'. Consequently, the most enduring environmental behaviour changes for all the participants can be attributed to later life experiences.

### **6.3.2 Research Question 2: How do participants' life experiences since the ROEE courses shape their environmental attitudes and behaviours?**

The exploratory interviews in this study focused on the influence of ROEE courses on participants' environmental attitudes and behaviours. As explained in **Section 6.3.1**, the findings of the interviews indicate that ROEE courses were not the primary experiences that accounted in any significant way for their environmental behaviour change. Analysis of their main interview accounts, however, focused on their experiences after the ROEE courses. The point of departure for this section lies in the differences between the physical and social environment of the participants at the time when they participated in their ROEE, as compared to the environments they inhabited later in life.

The findings revealed that moving to different countries, affiliation with environmental organisations or associations, and supportive social groups were central in encouraging participants' environmental behaviour change. It is interesting to note that these events are strongly associated with broader social conditions, as opposed to curriculum or pedagogy. Not only did the events provide participants with the TTM's processes of change that are socially-related (e.g. social liberation and environmental re-evaluation), but also with processes that are psychologically-related (e.g. consciousness raising, counterconditioning and stimulus control). This finding indicates that environmental behaviour change is heavily influenced by social conditions and is complemented by psychological conditions, and highlights a contrast with previous studies that, for the most part, have paid more attention to psychological conditions. This point can be observed in the way that my own thinking developed as the thesis progressed. While this study began with looking at the participants' psychological ability to learn from the difference between the 'context' of learning acquisition and its application elsewhere (in other contexts), the importance of the relationship between social and psychological factors became more and more apparent.

The various impacts of social and psychological influences on the pro-environmental actions that one performs can be viewed from the binary perspectives that I have drawn from the thematic analysis. The diversity of pro-environmental action is the result of social and/or psychological influences. Binary perspectives are a helpful means of illustrating that many individuals who do not perform pro-environmental actions in one way, perform them in a contrasting way. These findings also demonstrate that people may perform pro-

environmental actions in various forms, depending on their psychological and/or social conditions. For example, if someone is in a situation that enables him/her to perform a direct action (e.g. recycling), they may simultaneously perform an indirect action (e.g. hiking). Or, if one cannot perform a public-sphere action (e.g. involvement in an environmental community programme), perhaps he/she can perform a private-sphere action (e.g. practising recycling at home). In addition, the findings from the binary themes suggest that a pro-environmental action is not necessarily 'big' nor difficult to perform. For example, one may perform a non-activist action such as recycling individually, which may seem less efficient in comparison to community-based recycling as an activist action. However, the non-activist action may be more substantial if it is performed as a transforming action, when recycling is not the norm of the social group to which that person belongs.

Taken together, these findings from the second research question point to a reconceptualisation of how one may perform pro-environmental action and/or change one's environmental behaviour. This reconceptualisation (which is presented in the following section) is the principal contribution to knowledge that this study offers. In comparison to the existing models that were presented in **Section 2.6**, this proposed model provides different, yet crucial, views about the processes of environmental behaviour change.

#### **6.4 Contribution to knowledge**

The findings from this study contribute to several bodies of knowledge. Most importantly, this study reconceptualises environmental behaviour in terms of change processes. To highlight this principal contribution, this section is divided into two smaller sections that present the principal and additional contributions.

#### **6.4.1 Principal Contributions: Reconceptualisation of the process of change in environmental behaviour**

Many conceptual papers and empirical studies have proposed models and theories to explain how certain factors interact with each other in the process of environmental behaviour change. Some of these models and theories (e.g. Ajzen, 1991; Kollmuss & Agyeman, 2002) acknowledge social influences. However, most of those reviewed in this thesis suggest that psychological influences are the key factors in the process, while social influences are the auxiliary factors. Having conducted this study, I am able to propose new ways of thinking about the processes involved in changing environmental behaviour, which add to the previous models and theories.

Based on the evidence from this study, that takes into account participants' life experiences, it is clear that the process of changing environmental behaviour is associated with both one's personal identity (PI) and one's social identity (SI). SI refers to an individual's self-concept about himself/herself in relation to the influence of their membership of a social group (Tajfel, 1974). PI refers to an individual's exclusive qualities, beliefs and preferences (Forsyth, 2014) with the central priority being a person's own goals and desires (Stets & Burke, 2000). If we accept that identity is essentially the product of SI and PI (as per Mead, 1934 and Stets & Burke, 2000, for example), performing actions of any kind (including pro-environmental ones) is strongly dependent on these two kinds of identity being in alignment. **Figure 6.1** demonstrates how people's life experiences shape their environmental attitudes and behaviours in ways that are determined by both PI and SI.



**Figure 6.1** Visual representation of how people’s life experiences shape their environmental behaviours

The above diagram shows the relational possibilities between an individual and his/her personal identity in a social group which serve to define his/her social identity – all of which combine to influence environmental behaviour. Based on this study’s findings, it is reasonable to suggest that perceived environmental knowledge and environmental attitudes establish an individual’s PI. Environmental knowledge that determines one’s PI might comprise one’s understandings of effects and their root causes, strategies for change, and alternatives and visions (Jensen, 2002; 2004); or it may come in the form of system knowledge, knowledge of effectiveness, and action knowledge (Frick, et al., 2004). Environmental attitudes refer to one’s favourable or unfavourable feelings towards the natural world (e.g. Ajzen, 1991; 2002; Hines et al., 1987; Hwang et al., 2000; Kolmuss & Agyeman, 2002; Milfont & Duckitt, 2010). Influenced only by PI, it is possible that one may perform pro-environmental actions. These pro-environmental actions may be driven by

biospheric concerns (i.e. about the perceived costs and benefits for the ecosystem) or anthropocentric concerns (i.e. concerns about the perceived costs and benefits for humanity).

In this study, in the majority of cases, the participants' environmental attitudes and behaviour changes were influenced by their SI, which was determined by social groups, social norms, laws and policies; these are critical reference points that determine the approval and disapproval of behaviour within social groupings (Ajzen, 1991; Cialdini et al., 1991; Rimal & Lapinski, 2015). Social groups can be made up of a large group such as a society or a smaller affiliation such as family, work place or environmental volunteering associations, and the pro-environmental actions that are performed as the result of one's SI may be viewed from more diverse perspectives than those that are influenced by one's PI. This study found the following perspectives of pro-environmental actions within SI: conforming/transforming action, compulsory/optional action, immediate/gradual action, one-off/routine action, new/recurrent action, direct/indirect action, public/private-sphere action, and activist/non-activist action.

In the diagram, PI is separated from SI with a dotted line. This line indicates that the boundary between one's PI and SI is permeable; one's personal actions may influence group behaviours and vice versa. In addition, the dotted line indicates that pro-environmental actions that are influenced by SI can also be justified in either biospheric/anthropocentric actions. Therefore, this binary theme is placed at the centre of the diagram.

Intriguingly, the findings from this study suggest strongly that an individual's PI can be in conflict with their SI. For example, as experienced by several participants in this study, one's PI may be capable of driving their environmental behaviour to the TTM stages of contemplation, preparation, action or maintenance (Prochaska et al., 1992). However, because of the difference between their PI and SI, their behavioural changes actually regressed. Conflicts between the participants' PI and SI are not fixed, but rather are fluid and are negotiated over time. This process of negotiation between the two identities is one of the key ideas in this model and is represented by the red, two-way arrows.

With regard to moving towards the wider goal of ESD, Ashley (2005), Jickling and Wals (2008), and Vare and Scott (2007) note that it is important to develop the capacity to think critically. This involves learning how to make proper judgments regarding which environmental values are right or wrong in certain circumstances, while developing the ability to question alternatives and articulate, discuss, and negotiate our decisions. To this end, my proposed model suggests that the negotiation between one's PI and SI should be examined in order to fully understand their specific positions and mutual influence. Subsequently, this model suggests that pro-environmental actions that are performed through negotiation between PI and SI should produce what this current study terms 'sustainable citizenship behaviour'. The term 'sustainable citizenship behaviour', in its broadest sense, can therefore be regarded as sustainable environmental actions that are performed as a result of negotiations between one's personal identity and social identity.

#### **6.4.2 Additional Contributions**

The additional contributions of this study to knowledge can be divided into two important themes: the first relates to knowledge about ROEEs in Malaysia and the second concerns knowledge to do with environmental attitudes and behaviour change in a broader context.

##### **6.4.2.1 Contribution to knowledge about ROEE in Malaysia**

As I have already indicated, only two studies were found to have investigated the provision of ROEE courses in Malaysia (i.e. Asirvatham, 2009; Md Taff et al., 2010). The current study is the first to explore the efficiency of ROEE courses in having an impact on their participants' environmental attitudes and behaviours. The fact that this study is being conducted is, in and of itself, significant, because environmental education has existed in Malaysia for approximately 30 years.

Additionally, it is undeniable that this study has provided insights which are significant to the literature on Malaysian ROEEs because it has adopted a different methodological approach from the previous two studies. The studies by both Asirvatham (2009) and Md Taff et al. (2010) employed quantitative approaches while, in contrast, the current study

explores the impact of ROEE courses using mainly a qualitative approach. Furthermore, while the previous studies focused on the short-term effects of the courses through their cross-sectional perspectives, the current study provides an overview of how the courses and, crucially, the life experiences of participants since the courses, influenced participants' environmental attitudes and behaviours in both the short- and long-terms. As a result, this study has revealed findings that contrast greatly with previous ones: the exploratory interviews show that ROEE courses alone are not in fact significant enough events to influence environmental behaviour change, as outlined in Malaysia's national environmental education policies and the generally accepted aims of ESD.

Having identified these findings, this study extends our understanding of environmental education courses by proposing that researchers lift their 'investigative gaze' to participants' life experiences, before and after the course or lesson takes place. This broader longitudinal perspective encourages a discourse that pays closer attention to the interaction between ROEEs and the socio-cultural environments inhabited by participants over time. Although this study interrogates the influence of experiences subsequent to the ROEE on participants' environmental attitudes and behaviours, the data leads to wider-reaching contributions to knowledge that extend beyond the context of Malaysian ROEEs.

#### **6.4.2.2 Contribution to knowledge on environmental attitudes and behaviours**

This study's findings have also contributed to a wider context of literature, which extends beyond Malaysian environmental education. The approach to studying environmental attitudes and behaviours from a life-span perspective was adopted as a result of a critical analysis of related literature. This study addresses issues regarding the value of unfamiliarity, contrast, and spatial movement which are championed by Malaysian ROEEs by stressing the importance of Dewey's (1938) concept of the continuity of experience, and shining a spotlight on the limits of transfer of learning from one context to another, as originally championed by, among others, Priest and Gass' (2005). The key features of 'Brilliant Residentials' outlined by Kendall and Roger (2015) allowed for a more pointed examination and analysis of the findings.

In addition, although the previous models of environmental behaviour (e.g. Ajzen, 1991; Kollmuss & Agyeman, 2002) included both psychological and social influences in their models, as I have stated, most of them place greater emphasis on psychological influences than on sociological ones. This study however suggests that social conditions are in fact the dominant factor that influences what people think and do in relation to the natural world. This key finding – the important impact of social influences as well as individual psychological influences on changing environmental behaviours – suggests that this process is more complicated than has previously been acknowledged.

Another broader contribution to knowledge comes from findings drawn from participants' ROEE experiences and their lifespan experiences, which together influence their environmental actions which actions can be seen through the lens of their binary forms. The binary forms of pro-environmental actions suggest that pro-environmental actions generally manifest on either end of a themed spectrum. Although studies have identified a number of possible binary actions, the current study collates all of these binary themes and employs them in a more comprehensive, analytical manner. Understanding these binary forms of action is important, as they provide a more nuanced and contrasting way of interrogating how various influential factors may promote or hinder the performance of pro-environmental actions. Furthermore, it is important to note that some pro-environmental actions can fall into more than one category. For example, teaching environmental education can be viewed as a transforming and an activist action.

All of these findings have helped to develop a model that may help to reconceptualise the process of environmental behaviour change. This model is the principal contribution to knowledge arising from this study, as it compares different factors which change environmental behaviour and the interactions between these factors with other models (including the TTM), and is suited to any geographical context and capable of considering the accounts of the people living within them. The inclusion of social factors within sustainable development and ESD is not new, as other scholars and researchers, such as Jickling and Wals (2008), McKeown and Hopkins (2003) and Howell (2012), have already pointed this out. However, given the extended scope of the SDGs, which highlights the need to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' (United Nations, 2016, para 2), this does point to a convergence of opinion towards social aspects.

In comparison with the TTM (Prochaska, et al., 1992), the model that is proposed in this study can be viewed as a revised version of the TTM. The TTM combines the ideas from its two main constructs (i.e. stages of change and processes of change), which are explained in separate models. In contrast, in just one diagram, my own model in **Section 6.4.1** explains how environmental behaviour change occurs over time, and how processes of change may occur as the result of psychological and social pressures.

This research therefore adds to a growing body of literature now available and accessible nationally within Malaysia and also internationally. Most importantly, it offers a model that reconceptualises the processes that both enable and constrain environmental behaviour change, which may be of value to policy makers as well as those responsible for the design of ROEEs in Malaysia and elsewhere.

### **6.5 Methodological contributions**

As well as contributing to knowledge, this thesis has broken new ground on several methodological levels with regard to investigating the influences of environmental behaviour learning interventions, and subsequent life experiences more generally.

The most important methodological contribution comes from combining the concepts related to constructivist grounded theory (Charmaz, 2006), life history approaches (Uzzell et al., 2010) and the TTM (Prochaska et al., 1992) as an organising framework. The combination of this triangulating framework has elicited important insights on environmental behaviour change across a very long period of time (i.e. 31 years), yielded findings which have not been obtained from previous studies, and contributed to knowledge as discussed in the previous section. Indeed, by using these concepts to understand the influence of ROEE experiences on changes in environmental attitudes and behaviour, this inquiry addressed the limitations of approaches used in previous studies on Malaysian ROEE.

Furthermore, in previous empirical studies on residential outdoor education courses in other countries (N.B. not ROEE which is a specific acronym used in the current study), not a single study has been identified as having employed a life history methodology. Instead,

studies reviewed have used a cross-sectional approach that involves much shorter time scales. For example, previously, the longest time lapse between an ROEE course and the date of data collection was one year (Farmer et al., 2007).

While the life history approach that was adopted has its critics as it involves memory-based data, participant memory is not a limitation of this study. Through exploratory interviews, participants were encouraged to think about their past ROEE experiences. However, data from the main study interviews indicate that memories of the ROEE experiences did not have any impact on their environmental behaviour change. No participant perceived their memory of the ROEE course as the trigger that influenced any of their pro-environmental actions that they performed between the date of exploratory and main study interviews.

The contributions of this study that have been outlined in this and the previous section lead to implications for practice and policy, which are presented in the section that follows.

## **6.6 Implications for practice and policy**

In addition to the contributions to knowledge which are discussed above, there are also important implications for practice that have emerged from the findings of this study. Data-driven implications for practice have the ability to find 'the bright spots' (Heath & Heath, 2010) in realising the desired ultimate outcome in environmental education: changing environmental behaviour. I now present suggestions for policy makers and providers of ROEE in Malaysia, which may also be considered by other countries.

This study demonstrates the need for ROEE courses to rethink their practices in five principal ways. First, instead of transporting students to unfamiliar locations, with different ecological, social and geographical environments, it may be that locations closer to participants' everyday lives would be more effective. This suggestion is grounded in the study's findings which indicate that environmental behaviour change is highly influenced by the dominant social norms in which people normally dwell. By removing people from these norms, which is what happens when people attend ROEE courses, they are simultaneously removed from the most powerful social conditions that shape their behaviour. Furthermore, with reference to the concentric circles of outdoor learning proposed by

Beames et al. (2012) (see **Section 1.2**), the place of learning might be better located within the first or second zone (school grounds and local neighbourhoods). If ROEE courses are to continue with their current mandate to deliver environmental education in unfamiliar locations then they need to consider more seriously how participants are taught and how they can apply what they have learned in contrasting ecological, social and geographical environments. An example of this might be how learning on a marine ecology module can be applied to the context of living in an urban industrialised area. In these ways, participants are less concerned with the transfer of learning, so much as with learning about the places and communities in which they normally inhabit, where those places themselves offer both transformative experiences and can themselves be transformed in keeping with the principles of environmental sustainability. Consequently, participants may perform pro-environmental actions that have an immediate and significant relevance to their daily lives.

Second, and closely related to the first point, ROEE providers can be mindful of Dewey's (1938) concept of continuity and strive to inter-connect what happens during and after the ROEE with the ROEE itself. For example, prior to the ROEE courses, ROEE providers could gather information from the participants about the learning activities that they wanted to do during the courses, alongside information regarding their social support system for performing pro-environmental actions to create a continuity of experience. The ROEE providers could then use this information to inform existing learning modules for that particular group of participants. In the absence of pre-course information about the participants, ROEE providers should become adept at responding to participants' learning needs that are identified soon after the course begins. Following Kendall and Roger's (2015) work, residential outdoor education programmes should give suitable opportunities for participants to help design their own experiences.

Third, in order to aim for long-term solutions in environmental problems, it is reasonable to suggest that Malaysian ROEEs need to be reoriented towards biospheric approaches and away from anthropocentric approaches. Biospheric approaches have resonance with deep ecology, which views humanity and the natural environment as interdependent (Drengson, 2008; Drengson et al., 2011; Naess, 1973; 1986; 2015). As shown in my own findings, although anthropocentric approaches can be effective for encouraging immediate change in environmental behaviour, the changes do not endure as a result of this approach. It may

be that deep questioning and re-evaluating personal and professional values in relation to one's human/nature relationships should also be considered. Fourth, in keeping with the concept of continuity (Dewey, 1938), follow-up courses offered by ROEE providers could help participants strengthen and develop what they have learned during previous ROEE courses. The follow-up courses could take a variety of forms, such as an environmental talk, group discussion with other students, learning revision with teachers, or an environmental festival with workshops. Again, it is suggested that the follow-up courses use school grounds or local neighbourhoods as sites for learning. The key point here is that a more coherent pedagogical approach is required to integrate the zones of learning outlined in Beames et al. (2012).

The fifth implication for practice is a recommendation to establish better collaboration between ROEE providers, teachers and parents. It would be best if providers could furnish teachers and parents with guidance on how to support ongoing environmental education for the participants. This might include offering supportive environments for students to discuss and practise pro-environmental actions, especially if these are not aligned with the norms of their usual social communities.

In terms of implications for policy, the findings suggest that government officials who are involved in environmental education (i.e. the Ministry of Education) should give serious attention to the ways in which teachers are encouraged to promote environmental action in schools, rather than being exclusively concerned with academic excellence within an exam-oriented educational system (see Hwang and Embi, 2007, and Othman, 2009).

Additionally, it is suggested that government officials establish an officially-endorsed policy on ROEE and informal education in general – features that are currently absent in Malaysia. This national level recommendation needs also to filter down to MENGO in order to elicit greater transparency and accountability of the educational practices of ROEE. This would outline explicitly the objectives of ROEEs, the guidelines of how they should be managed, and also a requirement for the educators of ROEE courses to possess some form of teaching qualification. The last proposal regarding teaching qualifications is based on my data analysis and is especially recommended because there is currently no requirement for this. In **Section 1.5**, where I explained my personal experiences and observations on two ROEE courses while working as a research assistant in a university, I pointed out the

inconsistency between the rationales for selecting the participants to attend the ROEE courses with the content of the courses. The participants were selected on the basis of concerns they expressed about particular environmental problems occurring in their school and residential area; however, the content of ROEE courses addressed different environmental problems. This observation suggests that the designers and providers of ROEE courses may lack teaching knowledge.

My data show that ROEE staff present their students with headline statements (i.e. the teaching intention) that signal they are about to start teaching environmental education, but when they begin to teach it is not clear how the chosen activities relate to the teaching intention. Nor is it clear from my own data whether what is being taught is actually what is being learned. Nicol (2001) found a similar phenomenon whilst researching residential outdoor centres in the United Kingdom, where teachers were found to be engaging in post-hoc rationalism, whereby they would deliver certain adventurous activities that they had always done and then add convenient labels afterwards (e.g. 'personal and social development' and 'environmental education'). He later developed a term called 'Concept-Based Practice', which was intended to counter post-hoc practices (personal communication). This approach encourages teachers to think first of the concept they want to deliver and then develop suitable practices (or learning activities) that are specifically designed to relate teaching objectives to learning outcomes. My own findings suggest that ROEE courses are also engaging in a form of post-hoc rationalism and my recommendation is that they, too, embrace a concept-based practice approach.

### **6.7 Limitations of the study**

Every decision made throughout the course of this study considered what would increase its overall trustworthiness. However, I am aware of certain methodological limitations. Some of these were unavoidable. Those limitations are presented in this section.

This study took place in the 'real world' context of ROEE courses in Malaysia. It is a common practice in Malaysia that these courses are located in areas that are ecologically, socially and geographically unfamiliar to the participants. For this reason, any generalisation of the

findings from this study may be limited to those ROEE courses that adopt a similar approach.

The fact that this study used a small sample size also limited the extent to which it is possible to generalize on the basis of the research findings. The small sample size was not intentional. Although the process of sampling took place over more than three months, and adopted a convenience sampling method suitable for grounded theory research and for gathering hard-to-reach participants, only eleven participants were recruited. In order to access potential participants, 16 ROEE providers who are members of MENGO were contacted to help identify potential participants. However, only one of these organisations was willing to help. The others either did not respond to the email or refused to cooperate due to internal policies that restrict information disclosure to studies that are explicitly unrelated to their organisation. Whilst I might speculate as to why these ROEEs chose not to co-operate, I nevertheless had to respect their positions. Therefore, although I tried to increase the sample size through social media, this organisational barrier inevitably placed limitations on the number of participants available for my research.

The number of participants was also reduced due to a perceived lack of community support. Although the survey managed to obtain 48 potential participants, 37 of them did not want to participate in the exploratory interviews. Their reasons included anxiety about participating and difficulties with arranging when and where to meet. Others simply did not respond to the exploratory interview invitation email. Perhaps, had more participants taken part in this study, there might have been an opportunity to gather fuller and richer data.

Despite its limitations, this study was conducted in a reflexive manner and accordingly developed a research approach (see **Section 3.3**) that resulted in substantial contributions to knowledge, methodology, and practice (see **Sections 6.5** and **6.6**). The limitations presented in this section are presented as an honest appraisal which recognises what might have been, but should in no way detract from its major findings. At all times due regard was paid to the trustworthiness of the study -- the processes of which have been carefully described. However, in order to encourage a greater contribution, I outline some suggestions for future research in the next section.

## **6.8 Recommendations for future research**

Having discussed the overall findings, contributions, limitations and implications of this study, I conclude by outlining recommendations for future research.

First, I support the suggestion by Lugg (2007) that studying the long-term effects of environmental education is aligned with the demands of ESD. Education for sustainable development should aim to develop critically-thinking environmental citizens who can perform pro-environmental actions according to the needs of their social community (Ashley, 2005; Courtenay-Hall & Rogers, 2002). For this purpose, research on ROEE and ESD should take into account the social factors within environmental behaviour influences, which can be revealed by using, for example, a life history approach that reflects the fluid social conditions one encounters over long periods of time. Future research, using a life history approach, should investigate further these social effects and influences within Malaysia and in wider national and international contexts and explore whether the findings from this study are replicated elsewhere.

The second recommendation for future research is to explore in more detail what particular factors hindered or facilitated the pro-environmental actions of participants, and what kind of support they might need in order to start and maintain changes to their environmental behaviours. Although these areas were covered to some extent in the current study, these findings were drawn primarily from my own interpretation of the data. However, it is important to deepen further our understandings of environmental behaviour change from participants' own perspectives. This extension to the current study could be done either with the same participants or with new participants.

A third area of inquiry that is ripe for research is to undertake similar approaches to those that I have used, but to involve a larger and more varied sample. This would help to increase the generalisability of the findings. Considering that the sampling process was perhaps the biggest challenge and limitation of the current study, any future studies are advised to lengthen the duration of the sampling period and data collection in order to allow further snowballing. Armed with a larger sample size, more detailed findings about psychological and social environmental influences on attitude and behaviour change might

be gathered. Such an approach might comprise a quantitative component that would test the model that reconceptualises the process of how pro-environmental change may occur.

This study began by reviewing literature on the psychological explanations of environmental behaviour change. Social theory literature was brought in at a much later stage, as the research findings reflected the power of social influences on various levels. Therefore, the final recommendation is that future research should draw more heavily on theories that are able to account for the ways in which one's social surroundings at familial, peer, work, regional and national levels play a significant part in shaping why and how individuals change their pro-environmental attitudes and actions.

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## **APPENDIX A: Sustainable Development Goals**

Source: United Nations (2016)

### **Goal 1 : No poverty**

End poverty in all its forms everywhere

### **Goal 2 : Zero hunger**

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

### **Goal 3 : Good health and well-being**

Ensure healthy lives and promote well-being for all at all ages

### **Goal 4 : Quality education**

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

### **Goal 5 : Gender equality**

Achieve gender equality and empower all women and girls

### **Goal 6 : Clean water and sanitation**

Ensure availability and sustainable management of water and sanitation for all

### **Goal 7 : Affordable and clean energy**

Ensure access to affordable, reliable, sustainable and modern energy for all

### **Goal 8 : Decent work and economic growth**

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

### **Goal 9 : Industry, innovation and infrastructure**

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

**Goal 10: Reduced inequalities**

Reduce inequality within and among countries

**Goal 11: Sustainable cities and communities**

Make cities and human settlements inclusive, safe, resilient and sustainable

**Goal 12: Responsible consumption and production**

Ensure sustainable consumption and production patterns

**Goal 13: Climate action**

Take urgent action to combat climate change and its impacts

**Goal 14: Life below water**

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

**Goal 15: Life on land**

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

**Goal 16: Peace, justice and strong institutions**

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

**Goal 17: Partnerships for the goals**

Strengthen the means of implementation and revitalize the global partnership for sustainable development

## APPENDIX B: Research Advertisement

Dear all,

Have you ever participated in any ENVIRONMENTAL CAMP as a primary/secondary/high school student?

I'd love to know more about your experience with such programme(s). Please take a few minutes to complete this survey.

I am carrying out a study on outdoor environmental education. The aim of the research is to investigate how learning about environmental issues and developing eco-friendly behaviour at residential camps in Malaysia may or may not be influenced by the immediate physical and social surroundings of the camp.

The criteria of the camp that I am looking at are as follow:

- i. Location : held at a residential camp or an outdoor camp
- ii. Duration : at least 2 days and 1 night (overnight)
- iii. Content of the camp: at least one of the following issues or other environmental issues was addressed during the camp.
  - a. Pollution
  - b. Biological diversity
  - c. Carbon footprint
  - d. Endangered species
  - e. Energy conservation
  - f. Environmental health
  - g. Environmental law
  - h. Global warming and climate change
  - i. Habitat destruction
  - j. Land use and degradation
  - k. Population growth
  - l. Relationship between human and the environment
  - m. Resource depletion
  - n. Soil erosion

- o. Survival in nature
- p. Waste management
- iv. Example of the camp :
  - a. Environmental Awareness Camp
  - b. Toyota Eco Youth
  - c. Wilderness
  - d. Scouts camping

So, if you have ever participated in an environmental education programme such as described above, I would like to ask if you would participate in this survey.

Please read the instruction on the first page of the online survey carefully for further information.

Simply click on the following link to begin:

<https://www.surveymonkey.com/s/QFJL5W2>

Your participation is highly appreciated. Also, I would be so grateful if you could circulate this survey to your friends that have participated in such camp.

Thank you.

Best wishes,

Sharifah Intan Sharina Syed Abdullah

PhD Research Student

Moray House School of Education

University of Edinburgh

## APPENDIX C: First Draft of Questionnaire Survey



### PILOT STUDY

An investigation of decontextualised environmental camp experiences in developing environmental-friendly behaviour

Penyiasatan tentang pengalaman penyertaan kem alam sekitar yang di luar konteks dalam membangunkan tingkah laku mesra alam

Moray House School of Education, The University of Edinburgh

Dear respondents,

Thank you for taking the time to participate in this survey, which is part of my PhD project at the University of Edinburgh. The aim of the research is to investigate how learning about environmental issues and developing eco-friendly behaviour at residential camps may or may not be influenced by the camp's immediate physical and social surroundings – known as 'context'.

#### Procedure

At the end of this page, you will be directed to a questionnaire (bilingual: English and Malay) that is designed to gather your opinions from participating in an environmental camp.

There are two types of questions in the questionnaire. The first type features questions with multiple choice answers and the second features open-ended questions. For some multiple choice questions you will be asked to explain the reason of your choice of answer.

Please answer all the questions to the best of your ability and do not leave any responses blank (even very brief answers will do).

#### Confidentiality and participation

All data obtained from participants will be kept confidential, secure, and anonymous. Only the researcher will have access to the data. Participation in this research study is completely voluntary and you have the right to withdraw at any time.

#### Queries about the Research

If you have questions or queries regarding this study, you may contact me or my supervisors by email. We are happy to respond.

Sharifah Intan Sharina Syed Abdullah - S.Syed-Abdullah@sms.ed.ac.uk

Dr. Simon Beames - Simon.Beames@ed.ac.uk

Dr. Robbie Nicol - Robbie.Nicol@ed.ac.uk

Thank you very much for your time and insights.

Sharifah Intan Sharina Syed Abdullah

Next



## PILOT STUDY

An investigation of decontextualised environmental camp experiences in developing environmental-friendly behaviour

Penyiasatan tentang pengalaman penyertaan kem alam sekitar yang di luar konteks dalam membangunkan tingkah laku mesra alam

Moray House School of Education, The University of Edinburgh

SECTION A: WHO ARE YOU?

BAHAGIAN A: SIAPAKAH ANDA?

First, please tell me about yourself.

Pertama sekali, sila nyatakan tentang diri anda.

### 1. What is your Gender?

Apakah jantina anda?

- Male / Lelaki
- Female / Perempuan

### 2. What is your current age?

Berapakah umur anda sekarang?

- 18-22
- 23-27
- 28-32
- 33-37
- 38-42
- Other / Lain-lain

### 3. What is your ethnicity? (Please select all that apply.)

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black or African American
- Hispanic or Latino
- White / Caucasian
- Other / Lain-lain

### 4. What is the highest level of education you have completed?

Apakah tahap pendidikan tertinggi anda?

- Diploma or equivalent / Diploma atau yang seumpamanya
- Bachelor degree or equivalent / Ijazah sarjana muda atau yang seumpamanya
- Master degree or equivalent / Ijazah sarjana atau yang seumpamanya
- PhD or equivalent / Doktor falsafah atau yang seumpamanya
- Other / Lain-lain

**5. Which of the following best describes the area you currently live in?**  
**Yang manakah antara berikut menerangkan kawasan tempat tinggal anda sekarang?**

- Urban / Bandar
- Suburban / Pinggir bandar
- Rural / Luar bandar

**6. Which of the following best describes the area you lived in when you participated in the programme?**  
**Yang manakah antara berikut menerangkan tempat tinggal anda semasa menyertai program tersebut?**

- Urban / Bandar
- Suburban / Pinggir bandar
- Rural / Luar bandar

**7. What sector are you working in?**  
**Apakah sektor pekerjaan anda?**

**8. Which of the following best describes your position of employment?**  
**Yang manakah antara yang berikut menerangkan posisi jawatan anda dalam pekerjaan?**

- Upper management / Pengurusan atasan
- Middle management / Pengurusan pertengahan
- Junior management / Pengurusan bawah
- Administrative staff / Staf pentadbiran
- Support staff / Staf sokongan
- Student / Pelajar
- Trained professional / Profesional terlatih
- Skilled labourer / Buruh mahir
- Consultant / Perunding
- Temporary employee / Pekerja sementara
- Researcher / Penyelidik
- Self-employed / Bekerja sendiri
- Unemployed / Tidak bekerja
- Other / Lain-lain

**9. The organisation you work for is in which of the following?**  
**Antara yang berikut, yang manakah menerangkan tentang organisasi pekerjaan anda?**

- Public sector / Sektor awam
- Private sector / Sektor swasta
- Non-profit / Tanpa keuntungan
- Unemployed / Tidak bekerja
- Other / Lain-lain

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SECTION B: THE PROGRAMME IN WHICH YOU PARTICIPATED  
BAHAGIAN B: PROGRAM YANG ANDA SERTAI

Now, please tell me about the programme in which you participated.  
Sekarang, sila nyatakan tentang program yang anda sertai.

**10. When did the programme take place?  
Bilakah anda menyertai program tersebut?**

- Less than 5 years ago / Kurang daripada 5 tahun yang lalu
- Between 5-10 years ago / Antara 5-10 tahun yang lalu
- Between 10-15 years ago / Antara 10-15 tahun yang lalu
- Other / Lain-lain

**11. What was the name of the programme?  
Apakah nama program tersebut?**

**12. Who organised the programme?  
Siapakah penganjur program tersebut?**

- My school / Sekolah saya
- District education department / Pejabat pelajaran daerah
- State education department / Jabatan pendidikan negeri
- Department of Environment, Ministry of Natural Resources and Environment / Jabatan Alam Sekitar, Kementerian Sumber Asli dan Alam Sekitar
- Non-government organization (please specify which one) / Organisasi bukan kerajaan (sila nyatakan secara spesifik)

**13. How did you come to take part in the programme?  
Bagaimanakah anda menyertai program tersebut?**

- Volunteered or free will (if ticked, please answer Question 14) / Suka rela atau kehendak sendiri (jawab soalan 14 jika anda memilih jawapan ini)
- Selected by the teacher / Dipilih oleh guru
- Participation is compulsory for member of the club/association I join / Penyertaan adalah diwajibkan kepada ahli kelab/persatuan yang saya sertai
- Other / Lain-lain

**14. How did you take part voluntarily?**

**Bagaimanakah anda mengambil bahagian secara sukarela?**

- It was offered at my school / Ianya ditawarkan di sekolah saya
- I contacted the organiser of the programme and signed-up myself / Saya hubungi penganjur program dan mendaftarkan diri

Other / Lain-lain

**15. Where did the programme take place?**

**Di manakah program ini diadakan?**

**16. What was / were the principal environmental issue(s) highlighted in the programme? (You may choose more than one answer)**

**Apakah isu alam sekitar utama yang ditekankan dalam program tersebut? (Anda boleh memilih lebih daripada satu jawapan)**

- Global warming and climate change / Pemanasan global dan perubahan iklim
- Biological diversity / Kepelbagaian diversiti
- Ecology conservation / Pemuliharaan ekologi
- Pollution / Pencemaran
- Carbon footprint / Kesan karbon
- Land use and degradation / Penggunaan tanah dan degradasi
- Energy conservation / Pemuliharaan tenaga
- Waste management / Pengurusan air
- Other / Lain-lain

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SECTION C: YOUR REFLECTIONS ON THE PROGRAMME  
BAHAGIAN C: REFLEKSI ANDA TENTANG PROGRAM TERSEBUT

Next, I would like to get your general thoughts about the programme.  
Seterusnya, saya ingin mendapatkan pendapat umum anda tentang program tersebut.

**17. Did you enjoy the programme?  
Adakah program tersebut menyeronokkan?**

- Definitely / Pasti
- Mostly / Kebanyakan
- Some / Sesetengah
- Mostly not / Kebanyakan tidak
- Not at all / Tidak sama sekali

Please give reason(s) for your answer / Sila berikan alasan jawapan anda.

**18. Please list up to three activities that you remember the most from the programme?  
Sila senaraikan tiga aktiviti daripada program tersebut yang paling anda ingati?**

Activity 1 / Aktiviti 1

Activity 2 / Aktiviti 2

Activity 3 / Aktiviti 3

**19. Why do you think those activities are memorable?  
Mengapakah anda aktiviti-aktiviti tersebut sukar dilupakan?**

**20. How do you think your attitudes and behaviours towards the natural world were influenced by the programme?  
Bagaimanakah program ini mempengaruhi sikap dan tingkah laku anda terhadap alam sekitar?**

**21. What aspects of the programme do you think accounted for these influences?  
Apakah aspek program yang menyumbang kepada pengaruh tersebut?**

The following questions refer to the issue(s) you ticked in question number 16 (the principal environmental issue(s) highlighted in the programme).  
Soalan-soalan yang berikut adalah merujuk kepada isu/isu-isu yang anda tandakan dalam soalan 16 (isu alam sekitar utama yang ditekankan dalam program tersebut)

**22. Which aspects of the programme helped you learn about the specific environmental topic/issue?  
Aspek program yang manakah telah membantu anda belajar tentang topik/isu alam sekitar tersebut?**

**23. Which aspects of the programme did not help you learn (or made no difference to your learning) about the specific environmental topic/issue?**

**Aspek program yang manakah tidak membantu pembelajaran anda (atau tidak memberi kesan terhadap pembelajaran anda) tentang topik/isu alam sekitar tersebut?**

**24. How did you perceive the specific environmental topic/issue before and immediately after the programme? Has your current view changed since then? How/why?**

**Bagaimanakah pandangan anda tentang topik/isu alam sekitar tersebut sebelum dan sebaik tamatnya program?**

**Adakah pandangan tersebut telah berubah sekarang? Bagaimana/mengapa?**

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SECTION D: WOULD YOU MIND BEING INTERVIEWED?

BAHAGIAN D: SUDIKAH ANDA DITEMUBUAL?

Thank you for completing this questionnaire. This study is also looking to interview people who have completed the online survey. I would be most grateful if you could let me know if you are willing to be interviewed.

Terima kasih kerana telah melengkapkan soal selidik ini. Kajian ini juga ingin menemubual responden yang telah melengkapkan tinjauan atas talian ini. Saya amat menghargai sekiranya anda sudi ditemubual.

**25. Are you willing to be interviewed?**

**Adakah anda sudi ditemubual?**

- Yes, I would be happy to share more about my experience at the environmental camp / Ya, saya berbesar hati untuk berkongsi lebih lanjut mengenai pengalaman saya di kem alam sekitar tersebut.
- No, I would not prefer to be interviewed / Tidak, saya memilih untuk tidak ditemubual.
- Other / Lain-lain

If you chose YES, please rank your preferences for the mode of interview and your contact details, so that I can get in touch with you.

Jika anda memilih YA, sila nyatakan turutan keutamaan anda tentang cara temubual dan berikan maklumat diri, supaya saya boleh berhubung dengan anda.

**26. Interview preference:**

**Keutamaan cara temubual:**

⋮	⌵	Face to face / Bersemuka
⋮	⌵	Phone / Telefon
⋮	⌵	Skype / Skype

**27. Name / Nama**

**28. Address / Alamat**

**29. Email / E-mel**

**30. Contact No. / No. Telefon**

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SECTION E: HOW TO IMPROVE THIS QUESTIONNAIRE?

BAHAGIAN E: BAGAIMANA UNTUK MEMPERBAIKI SOAL SELIDIK INI?

**31. Please give some comments/suggestions (if any) of how I should improve this questionnaire.  
Sila berikan komen / cadangan (jika ada) tentang bagaimana saya patut perbaiki soal selidik ini.**

**32. How long does it take for you to complete this questionnaire?**

**Berapa lamakah masa yang anda ambil untuk melengkapkan soal selidik ini?**

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## APPENDIX D: Finalised Questionnaire Survey



### AN INVESTIGATION OF DECONTEXTUALISED ENVIRONMENTAL CAMP EXPERIENCE IN DEVELOPING ENVIRONMENTAL-FRIENDLY BEHAVIOUR PENYIASATAN TENTANG PENGALAMAN PENYERTAAN KEM ALAM SEKITAR YANG DI LUAR KONTEKS DALAM MEMBANGUNKAN TINGKAH LAKU MESRA ALAM

Moray House School of Education, The University of Edinburgh

[English]

AN INVESTIGATION OF DECONTEXTUALISED ENVIRONMENTAL CAMP EXPERIENCE IN DEVELOPING ENVIRONMENTAL-FRIENDLY BEHAVIOUR

Dear respondents,

Thank you for taking the time to participate in this survey, which is part of my PhD project at the University of Edinburgh. The aim of the research is to investigate how learning about environmental issues and developing eco-friendly behaviour at residential camps may or may not be influenced by the camp's immediate physical and social surroundings – known as 'context'.

Procedure

At the end of this page, you will be directed to a questionnaire (bilingual: English and Malay) that is designed to gather your opinions from participating in an environmental camp.

There are two types of questions in the questionnaire. The first type features questions with multiple choice answers and the second features open-ended questions. For some multiple choice questions you will be asked to explain the reason of your choice of answer.

Please answer all the questions to the best of your ability and do not leave any responses blank (even very brief answers will do).

Confidentiality and participation

All data obtained from participants will be kept confidential, secure, and anonymous. Only the researcher will have access to the data. Participation in this research study is completely voluntary and you have the right to withdraw at any time.

Queries about the Research

If you have questions or queries regarding this study, you may contact me or my supervisors by email. We are happy to respond.

Sharifah Intan Sharina Syed Abdullah - S.Syed-Abdullah@sms.ed.ac.uk

Dr. Simon Beames - Simon.Beames@ed.ac.uk

Dr. Robbie Nicol - Robbie.Nicol@ed.ac.uk

Thank you very much for your time and insights.

Sharifah Intan Sharina Syed Abdullah

[Bahasa Melayu]

PENYIASATAN TENTANG PENGALAMAN PENYERTAAN KEM ALAM SEKITAR YANG DI LUAR KONTEKS DALAM MEMBANGUNKAN TINGKAH LAKU MESRA ALAM

Responden yang dihormati,

Terima kasih kerana meluangkan masa untuk mengambil bahagian dalam kajian ini yang merupakan sebahagian daripada projek PhD saya di Universiti Edinburgh. Tujuan kajian ini adalah untuk menyiasat bagaimana pembelajaran tentang isu-isu alam sekitar dan pembangunan tingkah laku mesra alam di pusat perkhemahan mungkin atau tidak mungkin dipengaruhi oleh persekitaran fizikal dan sosial kem tersebut - yang dikenali sebagai 'konteks'.

Prosedur

Di akhir halaman ini, anda akan dibawa ke soal selidik (dwibahasa: bahasa Inggeris dan Melayu) yang dibangunkan untuk mendapatkan pandangan berdasakan penyertaan anda dalam kem alam sekitar.

Terdapat dua jenis soalan dalam soal selidik ini. Jenis pertama mempunyai soalan dengan aneka pilihan jawapan dan jenis kedua adalah soalan terbuka. Bagi beberapa soalan pelbagai pilihan jawapan anda akan diminta untuk menjelaskan alasan pilihan jawapan anda.

Sila jawab semua soalan sebaik mungkin tanpa meninggalkan sebarang soalan tanpa jawapan (jawapan ringkas juga diterima).

**Kerahsiaan dan penyertaan**

Semua data yang diperolehi daripada peserta akan dirahsiakan, selamat, dan direkod tanpa mendedahkan maklumat peribadi anda. Hanya penyelidik akan mempunyai akses kepada data ini. Penyertaan dalam kajian ini adalah secara sukarela dan anda berhak menarik diri pada bila-bila masa.

**Pertanyaan mengenai Penyelidikan**

Jika anda mempunyai soalan atau pertanyaan mengenai kajian ini, anda boleh menghubungi saya atau penyelia saya melalui e-mel. Kami berbesar hati untuk memberi maklum balas.

Sharifah Intan Sharina Syed Abdullah - S.Syed-Abdullah@sms.ed.ac.uk

Dr. Simon Beames - Simon.Beames@ed.ac.uk

Dr. Robbie Nicol - Robbie.Nicol@ed.ac.uk

Terima kasih kerana sudi meluangkan masa dan memberikan pandangan anda.

Sharifah Intan Sharina Syed Abdullah

**SECTION A: WHO ARE YOU?**

**BAHAGIAN A: SIAPAKAH ANDA?**

First, please tell me about yourself.

Pertama sekali, sila nyatakan tentang diri anda.

**1. What is your Gender?**

**Apakah jantina anda?**

Male / Lelaki

Female / Perempuan

**2. What is your current age?**

**Berapakah umur anda sekarang?**

18-22

23-27

28-32

33-37

38-42

Other / Lain-lain

**3. What is the highest level of education you have completed?**

**Apakah tahap pendidikan tertinggi anda?**

SPM or equivalent / SPM atau yang seumpamanya

Diploma or equivalent / Diploma atau yang seumpamanya

Bachelor degree or equivalent / Ijazah sarjana muda atau yang seumpamanya

Master degree or equivalent / Ijazah sarjana atau yang seumpamanya

PhD or equivalent / Doktor falsafah atau yang seumpamanya

Other / Lain-lain

**4. How would you classify yourself?**

**Bagaimanakah anda mengelaskan diri anda?**

- Malay / Melayu
- Chinese / Cina
- Indian / India
- Multi-racial / Berbilang kaum
- Other / Lain-lain

**5. Which of the following best describes the area you currently live in?**

**Yang manakah antara berikut menerangkan kawasan tempat tinggal anda sekarang?**

- Urban / Bandar
- Suburban / Pinggir bandar
- Rural / Luar bandar

**6. Which of the following best describes the area you lived in when you participated in the programme?**

**Yang manakah antara berikut menerangkan tempat tinggal anda semasa menyertai program tersebut?**

- Urban / Bandar
- Suburban / Pinggir bandar
- Rural / Luar bandar

**7. In which sector do you work?**

**Yang manakah sektor pekerjaan anda?**

- Homemaker / Suri rumah
- Retired / Bersara
- Student / Pelajar
- Unemployed / Tidak bekerja
- Agriculture, forestry or fishing / Pertanian, perhutanan atau perikanan
- Arts, entertainment, or recreation / Seni, hiburan atau rekreasi
- Broadcasting / Penyiaran
- Education / Pendidikan
- Construction / Pembinaan
- Finance and insurance / Kewangan dan insurans
- Government and public administration / Kerajaan dan pentadbiran awam
- Health care and social assistance / Penjagaan kesihatan dan bantuan sosial
- Hotel and food services / Perhotelan dan servis makanan
- Information / Maklumat
- Processing / Pemprosesan
- Legal services / Perkhidmatan perundangan
- Manufacturing / Pembuatan
- Military / Ketenteraan
- Mining / Perlombongan
- Publishing / Penerbitan
- Real estate, rental or leasing / Hartanah, sewa atau pajakan
- Religious / Agama

- Retail or wholesale / Runcit atau borong
- Scientific or technical services / Saintifik atau perkhidmatan teknikal
- Telecommunications / Telekomunikasi
- Transportation / Pengangkutan
- Utilities / Utiliti
- Other / Lain-lain

**8. Which of the following best describes your position of employment?**

**Yang manakah antara yang berikut menerangkan posisi jawatan anda dalam pekerjaan?**

- Upper management / Pengurusan atasan
- Middle management / Pengurusan pertengahan
- Junior management / Pengurusan bawahan
- Administrative staff / Staf pentadbiran
- Support staff / Staf sokongan
- Student / Pelajar
- Trained professional / Profesional terlatih
- Skilled labourer / Buruh mahir
- Consultant / Perunding
- Temporary employee / Pekerja sementara
- Researcher / Penyelidik
- Self-employed / Bekerja sendiri
- Unemployed / Tidak bekerja
- Other / Lain-lain

**9. The organisation you work for is in which of the following?**

**Antara yang berikut, yang manakah menerangkan tentang organisasi pekerjaan anda?**

- Public sector / Sektor awam
- Private sector / Sektor swasta
- Non-profit / Tanpa keuntungan
- Unemployed / Tidak bekerja
- Other / Lain-lain

**SECTION B: THE PROGRAMME IN WHICH YOU PARTICIPATED**  
**BAHAGIAN B: PROGRAM YANG ANDA SERTA**

Now, please tell me about the programme in which you participated.  
 Sekarang, sila nyatakan tentang program yang anda sertai.

**10. When did the programme take place?**

**Bilakah anda menyertai program tersebut?**

- Less than 5 years ago / Kurang daripada 5 tahun yang lalu
- Between 5-10 years ago / Antara 5-10 tahun yang lalu
- Between 10-15 years ago / Antara 10-15 tahun yang lalu
- Other / Lain-lain

**11. What was the name of the programme?**

**Apakah nama program tersebut?**

**12. Who organised the programme?**

**Siapakah penganjur program tersebut?**

- My school / Sekolah saya
- District education department / Pejabat pelajaran daerah
- State education department / Jabatan pendidikan negeri
- Department of Environment, Ministry of Natural Resources and Environment / Jabatan Alam Sekitar, Kementerian Sumber Asli dan Alam Sekitar
- Non-government organization (please specify which one) / Organisasi bukan kerajaan (sila nyatakan secara spesifik)

**13. How did you come to take part in the programme?**

**Bagaimanakah anda menyertai program tersebut?**

- Volunteered or free will (if ticked, please answer Question 14) / Suka rela atau kehendak sendiri (jawab soalan 14 jika anda memilih jawapan ini)
- Selected by the teacher (if ticked, please proceed to Question 15) / Dipilih oleh guru (teruskan ke soalan 15 jika anda memilih jawapan ini)
- Participation is compulsory for members of my club (if ticked, please proceed to Question 15) / Penyertaan adalah wajib kepada ahli kelab/persatuan saya (teruskan ke soalan 15 jika anda memilih jawapan ini)
- Other (if ticked, please proceed to Question 15) / Lain-lain (teruskan ke soalan 15 jika anda memilih jawapan ini)

**14. How did you take part voluntarily?**

**Bagaimanakah anda mengambil bahagian secara sukarela?**

- It was offered at my school / Ianya ditawarkan di sekolah saya
- I contacted the organiser of the programme and signed-up myself / Saya hubungi penganjur program dan mendaftarkan diri
- Other / Lain-lain

**15. How would you describe the location where the programme took place? (Tick all that apply)**

**Bagaimana anda menggambarkan lokasi di mana program ini diadakan? (Tandakan semua yang berkenaan)**

- Agricultural land / Kawasan pertanian
- Woods / Kawasan berhutan
- Swamp / mangrove / Kawasan berpayau
- Hills / mountains / Kawasan pergunungan atau berbukit

- Seaside or coastal / Kawasan tepi pantai
- Plantation / Kawasan perladangan
- Urban or town / Dalam kawasan bandar
- Other / Lain-lain

**16. What the environmental issue(s) did you learn about in the programme? (Tick all that apply)**

**Apakah isu alam sekitar utama yang anda pelajari dalam program tersebut? (Tandakan semua yang berkenaan)**

- Air pollution / Pencemaran udara
- Biological diversity / Kepelbagaian diversiti
- Carbon footprint / Kesan karbon
- Endangered species / Kepupusan spesies
- Energy conservation / Pemuliharaan tenaga
- Environmental health / Kesihatan persekitaran
- Environmental law / Undang-undang alam sekitar
- Global warming and climate change / Pemanasan global dan perubahan iklim
- Habitat destruction / Kemusnahan habitat
- Land use and degradation / Penggunaan tanah dan degradasi
- Light pollution / Pencemaran cahaya
- Noise pollution / Pencemaran bunyi
- Population growth / Pertumbuhan penduduk
- Relationship between human and the environment / Hubungan antara manusia dengan alam sekitar
- Resource depletion / Kekurangan sumber
- Soil erosion / Hakisan tanah
- Survival in nature / Kehidupan dalam alam semula jadi
- Waste management / Pengurusan sisa
- Water pollution / Pencemaran air
- Other / Lain-lain

**17. Which activity(s) from the programme that help you learn about it? (Tick all that apply)**

**Aktiviti yang manakah dalam program ini yang membantu anda mempelajari isu tersebut? (Tandakan semua yang berkenaan)**

- Abseiling / Abseiling
- Air quality experiment / Eksperimen kualiti udara
- Archery / Memanah
- Barns cleaning on the farm / Membersihkan bangsal di ladang
- Beach cleaning / Membersihkan pantai
- Built a shelter / Membuat tempat perlindungan
- Climbing tower / Memanjat menara
- Communal work / Gotong-royong
- Cooking using solar energy / Memasak menggunakan tenaga solar
- Creative writing / Penulisan kreatif
- Cross-country / merentas desa

- Cycling / Berbasikal
- Drawing / Melukis
- Farming or gardening / Berkebun
- Field games / Permainan padang
- Feeding animals / Memberi makan kepada haiwan
- Fishing / Memancing
- Flying fox / Flying fox
- Group discussions / Perbincangan berkumpulan
- High/low ropes course / Meniti tali
- Jungle trekking / Meredah hutan
- Kayaking or canoeing / Berkayak atau berkanu
- Lecture / Ceramah
- Making environmental awareness posters / Membuat poster kesedaran alam sekitar
- Mangrove replanting / Menanam semula pokok bakau
- Cow or goat milking / Memerah susu lembu atau kambing
- Mountain biking / Berbasikal gunung
- Nature art / Seni alam semulajadi
- Night walk / Aktiviti burung hantu
- Orienteering / Pandu arah
- Painting / Mengecat
- Petting animals / Membelai haiwan/ternakan
- Riding animals / Menunggang haiwan
- Rock climbing / Rock climbing
- Set up a tent / Memasang khemah
- Species identification / Pengenal pastian species
- Sport activities / Aktiviti sukan
- Telematch / Sukaneka
  
- The briefing session / Sesi taklimat
- Treasure hunt / Mencari harta karun
- Video slide / Tayangan video
- Waste Recycling / Mengitar semula sisa
- Water quality experiment / Eksperimen kualiti air
- Woodworking / Kerja kayu
- Other / Lain-lain

**18. What other aspects helped you learn about the natural environment? (Tick all that apply)**

**Apakah aspek lain yang membantu anda mempelajari isu tersebut? (Tandakan semua yang berkenaan)**

- The facilitator / Fasilitator
- The location of the camp / Lokasi kem
- The peer participants / Rakan peserta
- Other / Lain-lain

SECTION C: WOULD YOU MIND BEING INTERVIEWED?  
BAHAGIAN D: SUDIKAH ANDA DITEMUBUAL?

Thank you for completing this questionnaire. This study is also looking to interview people who have completed the online survey. If you are willing to be interviewed, please provide your name and email address so that I can get in touch with you.

Terima kasih kerana telah melengkapkan soal selidik ini. Kajian ini juga ingin menemubual responden yang telah melengkapkan tinjauan atas talian ini. Jika anda sudi ditemubual, sila berikan nama dan alamat e-mel anda supaya saya boleh menghubungi anda.

**19. Name / Nama**

**20. Email / E-mel**

Thank you very much for completing the survey.  
Your help and cooperation is highly appreciated.

Terima kasih kerana telah melengkapkan soal selidik ini.  
Bantuan dan kerjasama anda amat dihargai.

Kind regards / Yang benar,  
Sharifah Intan Sharina Syed Abdullah

Email / E-mel: S.Syed-Abdullah@sms.ed.ac.uk

Done

## APPENDIX E: Interview Schedule for Exploratory Interviews

### Introduction

I want to thank you for taking the time to meet with me today. My name is Sharifah Intan Sharina Syed Abdullah. I am a doctoral student from the University of Edinburgh and I would like to talk to you about your experiences participating in the environmental camp, which is \_\_\_\_\_ as you mentioned in the online questionnaire.

Specifically, the main purpose of this interview is to investigate how learning about environmental issues and developing eco-friendly behaviour at residential camps may or may not be influenced by the camp's immediate physical and social surroundings. These kinds of surrounding I refer to as 'context'.

The interview should take less than an hour. If you don't mind, I will be audio taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. So, may I know if you do agree to letting me tape our conversation?

If you agree – So, because we're on tape, please be sure to speak up so that we don't miss your comments.

For your information, all data obtained from participants will be kept confidential, secure, and anonymous. Only the researcher will have access to the data. This means I will ensure that any information in my report does not identify you as the respondent.

Participation in this research study is completely voluntary and you have the right to withdraw at any time. You have the right not to talk about anything you don't want to and you may ask to end the interview at any time.

So, are you willing to continue with the interview? If you do, please read and sign the inform consent form.

### Themes

1. General information about the programme (e.g.: exact organiser, location and etc.)
2. Content of the programme.
3. General perception about the programme.
4. General perception about the outcome of the programme.
5. Specific perception on the outcome of the programme in developing pro-environmental behaviour.
6. The way pro-environmental behaviour developed through participation in the programme.
1. General factors influencing the outcome on the development of pro-environmental behaviour

2. The influence of context on the development of pro-environmental behaviour

### **Sample Questions**

1. Who organised the programme?
2. Where exactly did the programme take place?
3. What do you think of the programme? What was it about?
4. Did you enjoy the programme? Please give reason(s) for your answer.
5. What were the activities that you remember the most from the programme? Why do you think those activities are memorable?
6. Based on your response to the online survey, the camp highlighted environmental issues on \_\_\_\_\_. How do you think your behaviours towards those issues were influenced by the programme?
7. What aspects of the programme do you think accounted for these influences?
8. Which aspects of the programme helped you learn about the specific environmental topic/issue?
9. How does your participation affect your behaviour towards the other environmental issues?
10. Which aspects of the programme did not help you learn or made no difference to your learning about the specific environmental topic/issue?
11. How did you perceive the specific environmental topic/issue before the programme?
12. How was it immediately after the programme?
13. Has your current view changed since then? How/why?
14. What could you possibly do next time? Why.
15. What were some barriers, if any, that you encountered in the past and present in behaving pro-environmentally towards those issues?
16. What recommendations do you have for future efforts to improve environmental camps?

### **Closing**

Is there anything more you would like to add?

I will analyse the information you and others gave me separately and also as a whole. I will keep in touch with you while analysing it to ensure I analyse and report it precisely. I also will be happy to send you a copy of the draft of analysis, if you are interested.

Thank you for your time.

# APPENDIX F: Sample of Matrix of Analysis

Before ROEE	After ROEE	After EI	Remarks
<p>Pre-contemplation</p> <p>Tak mahu berambatkan di situ.</p>	<p>After ROEE (ROEE)</p> <p>Rasa laseh janggal banyak sangat kot sebab masa tu kan ramai masa sebelum mading lagi, harau yang sekarang ada lagi mading, harau yang nak sedunya skrg byk lagi. Bkanya tak la. Masa kecik tu...</p> <p>Tak jering kot. Kalau nak ngkat sebab benda dph lama. Tak tahu nak cakap macam mana. <i>Can't say</i></p> <p>Tapi yang ming seronoknya tu is camping la, camping tu ni ng seronok la.</p> <p>Sebab kte punya ungu? sendiri la kot mcau skg. Chp id dia tak endorse bawak tu. Maksudnya kta kta ni tak emploas skg. Bk buang sampah tu dia tak buat. Jadi benda tu kita tak apply sgt lah. Jadi bg akak dulu camping tu dulu is more on fun. Kita macam keluar drp norm. Bk satu duduk rumah je. Ni dapat keluar, duduk dengan kawan. Benda2 macam tu la. The same feeling that I have masa skrg ni pun.</p>	<p>After EI</p> <p>Do dat rumah. Tak de lah pulak. <b>Sebab gas rumah the environment tu lain kot.</b> Masa ni cap ek. Bila kita keluar benda tu kan la masa satu tmpt yg lain drp kte dulu, duduk kat pk pokok, tgg laut, kan benda tu mending kat pk. Jadi benda tu nak bawak balik rumah, macam mana ye? Kenangan tu nak bawak balik rumah? Susah kot. Macam mana nak bawak balik?</p> <p>Malaysia. <b>Dk office pun ade.</b> Buang je Tak ada. Ada ke lain kot office adu? Tak de. (frnt) Ada bin keta je. Tu tu je. la. p. 8. <i>Wah</i></p> <p>Facilities. Yes. Maksudnya <b>gov punya awareness</b> jugak lah. Maksudnya macam dia dekat sini dia bagi. Dia suruh semua nak lah dia sediakan facilities. Beker semua nak lah kan. Jadi kita boleh la buat benda ni. <b>dekat Malaysia, dia awareness pada orang facilities pun tak bagi.</b> Jadi macam lahi macam ambik siapa tak pa lah. Tak ada nak...</p> <p>Macam amna nak cilaq ek? Ye lah kor <b>Car</b> dibesarkan. Duduk dekat bandar macam cara dibesarkan tu lah. Tak expose kepada benda2 macam tu. Ak ma kan duduk dekat kampung. Mkk bapak dia buat benda tu. Dia Nampak benda tu dan dia buat. Macam kira duduk dekat kt, ni amna ada tempat nak buat benda-benda macam tu. Bk kampung pun, kampung pun bandar. Kan? p.17</p>	<p>Factor remained pre-contemplated.</p> <ul style="list-style-type: none"> <li>- ROEE</li> <li>- up and by - <i>Wah</i></li> <li>- Enforcement - <i>ment</i></li> <li>- P.S. relevant abg - <i>protection</i></li> <li>- <i>so, suggest</i></li> <li>- <i>but a good</i></li> <li>- <i>but what</i></li> <li>- <i>by people</i></li> <li>- <i>unlike</i></li> <li>- <i>disembatkan</i></li> </ul> <p>- <i>combination + program kaman</i></p> <p>- <i>boleh menghidatkan</i></p> <p>- <i>relapse.</i></p>
<p>Contemplation</p>	<p>So far raka da pun fikir nak buat lagi. P.9</p> <p>Memang best tapi so far tak de la rasa nak initiate nak buat benda tu</p> <p>Sebabnya ada ke orang nak? P.9</p> <p>Ada ke macam orang nak buat benda tu? Maksudnya memang ada. Tp to initiate tu tak lah kot. <i>Follow org mungkin ada lah rasa nak kot</i> P.9</p> <p>Tak pernah la terfikir, tapi kalau orang ajak boleh la macam tu. P.9</p> <p>Saja2 tu... banyak jeje la. Kamin writing tak siap. Tapi Factor kawan la. p.9</p> <p><i>combination</i></p>	<p>Memang best tapi so far tak de la rasa nak initiate nak buat benda tu</p> <p>Sebabnya ada ke orang nak? P.9</p> <p>Ada ke macam orang nak buat benda tu? Maksudnya memang ada. Tp to initiate tu tak lah kot. <i>Follow org mungkin ada lah rasa nak kot</i> P.9</p> <p>Tak pernah la terfikir, tapi kalau orang ajak boleh la macam tu. P.9</p> <p>Saja2 tu... banyak jeje la. Kamin writing tak siap. Tapi Factor kawan la. p.9</p> <p><i>combination</i></p>	<p>- <i>combination + program kaman</i></p> <p>- <i>boleh menghidatkan</i></p> <p>- <i>relapse.</i></p>

## **APPENDIX G: Sample of Interview Schedule for Main Study Interview**

### **INTERVIEW SCHEDULE FOR FAIZAH**

#### **[Establish rapport]**

Hi, Faizah. How have you been doing? It has been almost two years since we met in Jerteh.

First of all, I would like to thank you very much for agreeing, and for taking the time to be interviewed once again for my research. Your cooperation means a lot to me and my Ph.D. research.

#### **[Purpose]**

I shall explain to you once again, this research that I am conducting is to observe how the environmental camp that you joined in school influenced the development of environmental behaviour. In this interview, I might sometimes refer to the environmental camp as ROEE, which is an abbreviation for residential outdoor environmental education. It is a term that I am using in my research to refer to learning trips that bring participants away from home, overnight, to learn about the environment.

We discussed quite a lot already last time about your experience, but the reason I am conducting this interview is because I found from my analysis that there are points that are fascinating that I would want to know more about. But, apart from that, there are also some other questions that I would like to ask based on the comparison that I made between your experience and other people's experience.

#### **[Time line]**

As I told you when we were arranging this Skype call, the interview should take approximately between 40-60 minutes. In the event that the time runs out, the interview will be resumed only with your consent.

#### **[Consent and anonymity]**

Considering how important this interview is, I hope not to miss anything from what you have to say. Hence, I hope you will give your permission to let me record this interview session.

Participation in this research study is completely voluntary, and you have the right to withdraw at any time or to refuse to answer any question.

**[Confidentiality]**

All information obtained will be kept confidential, secure, and anonymous. I will use a pseudonym in quoting you. Nothing in my dissertation and subsequent published work will identify you. So, you may speak freely!

**[Motivation]**

This research does not intend to judge you in any ways. But, in general, from your experience, I aim to provide ideas for a better environmental education.

**[Transition]**

Are you still happy to proceed with the interview?

Is there anything you would like to ask before we move on?

**[Q&A]**

**SECTION A**

First and foremost, let's start with an overview about your **DOING and THINKING since the last interview.**

Main questions	Prompt
<p>Have you engaged in any pro-environmental activities since our last interview?</p> <p>These might be practices at home (e.g. washing and re-using plastic bags), at school (e.g. only buying refillable ink cartridges), with friends (e.g. not going to restaurants that use disposable plates and cutlery).</p>	<p>Could you elaborate more about them, please?</p> <p>i. What were the factors that made you perform the action? <i>(List of the potential answer to be explored)</i></p> <ul style="list-style-type: none"><li>- <i>cultural norms</i></li><li>- <i>access to facilities</i></li><li>- <i>influence of friends, family and etc.</i></li><li>- <i>regulations of affiliations</i></li></ul> <p>Do you think our conversation influenced your</p>

	<p>thinking about environmental behaviour?</p> <ol style="list-style-type: none"> <li>i. Did the previous interview encourage you to learn new facts, ideas, and tips for performing environmental actions?</li> <li>ii. After our conversation in the previous interview, have you experienced any negative emotions (e.g. feelings of incompetency, anxiety, worry etc.) that influenced your knowledge or ability for performing pro-environmental actions?</li> </ol> <p>Did you discuss our previous interview with anyone else?</p> <ol style="list-style-type: none"> <li>i. With whom?</li> <li>ii. What aspects of our interview did you discuss?</li> </ol> <p>I saw from your Facebook page that you are quite actively selling beauty products online. I am especially interested that many of the products I consider to be organic products, such as shampoo that is made from papaya, lavender, and hibiscus. Tell me more about this.</p> <ol style="list-style-type: none"> <li>i. What motivated you to start doing this business?</li> <li>ii. Has your decision to start selling this product been influenced by your environmental knowledge? (Explore her answer)</li> </ol> <p>Earlier, I already asked you if you had encountered a situation in which you planned to do something after attending ROEE course, but were not able to do it for a particular reason. Now, I would like to know if such a</p>
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	<p>situation also happened within the time since the last interview? Please tell me about this.</p> <ol style="list-style-type: none"> <li>i. What was the reason that hindered you from performing the action?</li> <li>ii. What did you do to overcome the problem that hindered you from performing the action?</li> </ol> <p>Within this time, since the last interview, Is there anything that your friends are doing or perhaps that you have seen from social media that you would like to do?</p> <p>Beginning from September 1' 2015, households in seven states have been instructed to separate their solid waste in suitable plastic bags before dumping them at home, on a mandatory basis. And from Jan 1, 2016, a maximum fine of RM1,000 will be imposed on those who are defaulting in doing so.</p> <ol style="list-style-type: none"> <li>i. How aware are you regarding this new policy?</li> <li>ii. In what ways has your everyday live been affected by this policy?</li> <li>iii. What do you think about this new policy?</li> </ol> <p>If you remember, a few months after the previous interview, in December 2014, Malaysia was hit by floods. It was among the biggest flood tragedies in history.</p> <ol style="list-style-type: none"> <li>i. In your opinion, what was the cause of the incident?</li> <li>ii. Was there any particular action you did during the tragedy?</li> <li>iii. In what ways has this tragedy affected your actions or behaviour?</li> </ol>
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	<p>When I interviewed you last time, you were teaching in Beluran, which is quite remote. You said that was one of the factors that prompted you to apply what you learned from the ROEEs where you use discarded material to make teaching aids. You said that you like the surroundings in Beluran as a result of the ROEEs you attended where you enjoyed the greenery and solace. But now, when we were arranging this interview, you told me that you have transferred to Johor. In what ways has this transfer affected your life in terms of pro-environmental behaviour?</p> <ol style="list-style-type: none"> <li>i. How would you compare the surroundings between your previous and current working place?</li> <li>ii. Is the school you are teaching now in an urban area or also remote?</li> <li>iii. Could you please tell me about this transition of the surroundings?</li> <li>iv. Has this transfer changed your teaching practice?</li> <li>v. Are you still using discarded materials for making teaching aids? If yes explain how.</li> <li>vi. Do you still integrate environmental education in your teaching? If yes explain how.</li> </ol> <p>What about now when Malaysia is currently experiencing extreme hot weather?</p> <ol style="list-style-type: none"> <li>i. In your opinion, what was the cause of the incident?</li> <li>ii. How did you deal with this situation?</li> <li>iii. In what ways has this tragedy had affect your actions or behaviour?</li> </ol>
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## **SECTION B**

Next, I would like to shift your attention to those things that I want to know more about based on **WHAT WE HAVE TALKED** about in the previous interview.

<b>Main questions</b>	<b>Prompt questions</b>
<p>In the last interview, you said that you came to be interested in the environment after you visited the recycling centre and attended the talk by the Department of the Environment. You explained how this helped you decide to stay in the society until you graduated from high school. Could you explain in what ways these two events had changed your perception?</p>	<p>Specifically, what were the elements in these activities that became influential in making you want to remain part of the nature society?</p> <p><i>(List of the potential answer to be explored)</i></p> <ul style="list-style-type: none"> <li>- <i>The content of the activities</i></li> <li>- <i>Friends or the other members of the society</i></li> <li>- <i>The advisor teachers</i></li> </ul>
<p>And you said, as a member of the society, there were, at least, two ROEE courses you attended. One of them was in a coastal area and another one in a forest.</p> <p>It was very interesting that you enjoyed the course that was in a forest more than the coastal area course. You explained that it was due to the factor of familiarity – you have been living and grew up in Jerteh, which geographically is located on a coast. However, when we talked about the outcome of both courses, you indicated that you learnt more useful things during the ROEE course. You learnt about how you can produce soap from food waste. And you also started picking up trash after you were trained in a way they made you do that continuously and repetitively throughout the programme.</p>	<p>Which ROEE course did you attend first?</p> <p>In what ways do you think the first ROEE may or may not have influenced your participation in the later programme?</p> <p>Besides their location and content of learning, what were the other differences between these two courses?</p> <p><i>(List of the potential answer to be explored)</i></p> <ul style="list-style-type: none"> <li>- <i>The role of the instructors/facilitators</i></li> <li>- <i>The other participants</i></li> </ul> <p>In what ways had these differences influenced your learning in the courses?</p>

<p>On the other hand, you found that it was challenging to apply what you learnt from the ROEE in a forest.</p> <p>So, if we compare the two courses, there are advantages and disadvantages for the purpose of learning from different aspects. Tell me more about the difference between the two courses.</p>	
<p>In the last interview I focussed on the positive outcomes of ROEEs that you attended, such as how the courses contribute to the development of your knowledge, attitude and pro-environmental actions. However, in the previous interviews, many other participants reported that they encountered a situation in which they planned to perform a particular pro-environmental action as a result of attending ROEE courses, but were not able to do it for certain reasons.</p>	<p>Have you encountered a same situation? Please tell me about this.</p> <p><i>(If she had encountered a same situation)</i></p> <ol style="list-style-type: none"> <li>i. What was the issue?</li> <li>ii. What were the reasons that hindered you from performing the action? <i>(List of the potential answer to be explored)</i> <ul style="list-style-type: none"> <li>- <i>cultural norms</i></li> <li>- <i>access to facilities</i></li> <li>- <i>influence of friends, family and etc.</i></li> <li>- <i>constraints of regulations of affiliations</i></li> </ul> </li> <li>iii. Did you do anything to overcome the problem that hindered you from performing the action?</li> </ol> <p><i>(If she had not encountered a same situation)</i></p> <ol style="list-style-type: none"> <li>i. What kind of support did you receive that had enabled you to perform the environmental actions? <i>(List of the potential answer to be</i></li> </ol>

	<p><i>explored)</i></p> <ul style="list-style-type: none"> <li>- <i>cultural norms</i></li> <li>- <i>access to facilities</i></li> <li>- <i>influence of friends, family and etc.</i></li> <li>- <i>regulations of affiliations</i></li> </ul>
<p>You continued reusing discarded materials when you became a teacher for making teaching aids in schools as you considered the cost factor. Were there any other factors that influence the continuation of this action?</p>	<p>In my experience of my previous research, I found that many teachers are not aware of the national policy to integrate environmental education across the curriculum. How aware you are about this policy?</p> <p><i>(If she is aware about the policy)</i></p> <ol style="list-style-type: none"> <li>i. What do you think about this policy?</li> <li>ii. To what extent does this policy influence your teaching practice?</li> <li>iii. How aware are you about the guideline book provided by the Centre of Curriculum Development for doing this?</li> <li>iv. How did you make use of this guideline book?</li> <li>v. In what ways you think this policy is difficult for you to apply in your teaching?</li> <li>vi. In what ways does your school support you to integrate environmental education in your teaching?</li> </ol> <p><i>(If she is not aware about the policy)</i></p> <ol style="list-style-type: none"> <li>i. Were you the only person in school who was engaging with pro-environmental behaviour?</li> <li>ii. Was this pro-environmental behaviour part of an existing or emerging school culture?</li> </ol>

	<p>*Explore both options (existing school culture and emerging school culture).</p> <p>iii. How was the existing 'environmental culture' created and maintained? (irrespective of whether it was positive or negative)</p> <p>Was there any other kind of support or encouragement that you received? (e.g. external websites, organisational memberships, etc.)</p>
<p>You graduated from IPG (teacher education institute), majored in Social Education, which covers geography, history and local studies. You said that for one academic year all courses related to the environment. Were there any other significant things that are related to learning about the environment while you were studying at IPG?</p>	<p>I believe there should be co-curriculum activities you would have taken part in. Could you tell me about these?</p> <p>i. How did your involvement in co-curriculum affect your teaching practices?</p> <p>ii. How did the involvement in co-curriculum affect your other environmental actions?</p> <p>When you were in the IPG, I wonder if there was any other ROEE you attended at that time. If there was any, I would love to hear about it.</p> <p>i. How did you come to take part in the programme?</p> <p>ii. Where was the location?</p> <p>iii. What were the activities?</p> <p>iv. What do you think you learned from the course?</p> <p>v. How do you think it was different from the one you attended in school?</p> <p>In what ways may or may not each of the ROEEs you attended have influenced any of</p>

	<p>your participation in the other ROEE courses?</p> <p>How was your social life when you were in the IPG?</p> <ol style="list-style-type: none"> <li>i. How was your social life influenced by the Social Education programme you were studying?</li> <li>ii. How did your friends influence your environmental activities when you were in the IPG?</li> </ol>
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**SECTION C**

I now want to shift your attention to things that you might have been happening in your **LIFE DURING YOUR SCHOOLDAYS**.

<b>Main questions</b>	<b>Prompt questions</b>
<p>In the last interview, you told me that you were a member of your school's nature society since you were in Form 1 until Form 5, and you were also a school prefect. Other than being part of these affiliations, how was your life in general during your schooldays?</p>	<p>Apart from your participation in the school's nature society, and attending these two ROEE courses, were there any other activities that you did at home, at school as well as in public?</p> <ol style="list-style-type: none"> <li>i. Tell me more about the activities.</li> <li>ii. What were the reasons for you doing these?</li> <li>iii. When did that happen?</li> <li>iv. Who else was involved?</li> <li>v. How influential were the people around you (e.g. family, friends, and teachers) on your activities?</li> </ol> <p>With regards to your participation in the school's nature society, could you please tell</p>

	<p>me more about your involvement in this society?</p> <ol style="list-style-type: none"> <li>i. Did you have any close friendships with other members?</li> <li>ii. How did these friendships affect your membership of the society?</li> <li>iii. Other than attending ROEE courses, visiting a recycling centre and attending a talk, what other activities did you do when you were part of the society?</li> <li>iv. Were these activities performed before or after the ROEE courses?</li> <li>v. What was your role in all of these activities?</li> <li>vi. Who else supported these activities?</li> </ol> <p>Were there any other affiliations – in school and out of school that you joined?</p> <ol style="list-style-type: none"> <li>i. If any, tell me more about the affiliation.</li> <li>ii. How did you became part of the affiliation?</li> <li>iii. Who did you join this affiliation with?</li> <li>iv. What were the activities you did when you were part of the affiliation?</li> </ol>
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**[Generic questions for probing]**

- a. Then what happened?
- b. What do you mean by \_\_\_\_\_?
- c. Can you give me an example about what you have just mentioned?
- d. You mentioned \_\_\_\_\_, what was that like for you?
- e. What else happened?
- f. What were your feelings about that?

- g. Please correct me if I am wrong, but it sounds like you are saying that \_\_\_\_\_.
- h. That is very admirable.
- i. Help me understand what you mean when you say \_\_\_\_\_.

**[Closing]**

Thank you very much Faizah, your response are very helpful. Is there anything else you want to add?

I've been asking all of the questions so far. Is there anything you'd like to ask me?

Once again, I would want to thank you for your time, cooperation and support for participating in my research.

## APPENDIX H: Consent Form for Participation

### Consent Form for Participation

Dear respondents,

Thank you for agreeing to participate in the research project, which is part of my PhD project at the University of Edinburgh. The details of the research project are:

Research Project name:	An investigation of decontextualized environmental camp experiences in developing environmental-friendly behaviour
Name of researcher:	Sharifah Intan Sharina Syed Abdullah
Researcher's Contact details:	Email : <a href="mailto:S.Syed-Abdullah@sms.ed.ac.uk">S.Syed-Abdullah@sms.ed.ac.uk</a> Phone : +447739711317 / +60192837515
Supervisors	Dr. Simon Beames - <a href="mailto:Simon.Beames@ed.ac.uk">Simon.Beames@ed.ac.uk</a> Dr. Robbie Nicol - <a href="mailto:Robbie.Nicol@ed.ac.uk">Robbie.Nicol@ed.ac.uk</a> .
Aim of the project:	The aim of the research is to investigate how learning about environmental issues and developing eco-friendly behaviour at residential camps may or may not be influenced by the camp's immediate physical and social surroundings – known as 'context'.
Confidentiality and Anonymity	All data obtained from participants will be kept confidential, secure, and will be reported anonymously. Only the researcher will have access to the data. Participation in this research study is completely voluntary and you have the right to withdraw at any time.

**Please complete the following:**

I consent to participating in this research project and understand that I may withdraw at any time.

Signature:	
Date:	