

**THE IMPLEMENTATION OF ENVIRONMENTAL  
EDUCATION AT MUSLIM SCHOOLS IN  
GAUTENG: A CASE STUDY**

by

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**DECLARATION:**

**I declare THE IMPLEMENTATION OF ENVIRONMENTAL EDUCATION IN MUSLIM SCHOOLS IN GAUTENG: A CASE STUDY is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.**

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**I. I. SULIMAN MOHAMMED**

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**DATE**

**DEDICATED TO MY FAMILY:**

**MY DEAREST PARENTS,**

**MY BELOVED WIFE,**

**MY SUPPORTIVE SISTERS,**

**AND MY THREE DARLING CHILDREN, MUHAMMAD,  
SIDDEEQAH AND IBRAHEEM**

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## **SUMMARY**

In this qualitative case study, I investigated the experiences of teachers employed at Muslim schools in the Gauteng Province in South Africa regarding the enabling and constraining factors for the implementation of EE at their schools. The study was inspired by the observation of the ongoing environmental problems in South Africa such as water shortages and environmental degradation with the realisation of the possible contributions that the Muslim schools may make in addressing such problems if they were to implement EE. Although some research has been conducted to indicate the challenging and supporting factors related to the implementation of EE in South African schools, little has been done regarding such factors in Muslim schools in Gauteng Province. Due to my pre-existing knowledge of the principles of the Quraan and Ahaadith (Prophetic traditions) which bears the guidelines for the practices of Muslim communities (including schools) and values regarding the environment, I regarded the limited research on this topic as a serious gap in literature. To contribute knowledge to this gap, a case study of five Muslim schools located in the Gauteng Province was conducted to observe their EE-related practices. These schools were selected through a convenience sampling technique which was followed by the purposive selection of 15 information-rich teachers for semi-structured, face-to-face interviews. These research methods were preceded by the analysis of the Qur'aan and Ahaadith (Prophetic Traditions) as well as the National Curriculum Statement (NCS) as stated in the Curriculum Assessment Policy Statement (CAPS) document. Findings indicated that EE implementation in the participating schools is enabled by factors such as inclusion of EE in the school's extra-curricular activities and teamwork among teachers to implement EE. Conversely, there are factors such as the lack of time and physical space as well as the lack of teaching resources related to EE which constrain the implementation of EE in these schools. Among the recommendations made was that Muslim school teachers need to participate in in-depth training courses directly related to EE implementation.

**Key terms:**

Environment; environmental education; environmental ethics; curriculum implementation; environmental education implementation; Muslim schools; Qur'aan; Ahaadith; National Curriculum Statement; Curriculum Assessment Policy Statement

**List of abbreviations:**

|          |  |
|----------|--|
| AMS-SA   | Association of Muslim Schools –South Africa                              |
| CAPS     | Curriculum Assessment Policy Statement                                   |
| CEDU REC | College of Education Research Ethics Committee                           |
| CIS      | Council of Islamic Schools   |
| DBE      | Department of Basic Education  |
| DESD     | Decade of Education for Sustainable Development                          |
| DoE      | Department of Education  |
| EE       | Environmental Education  |
| EEASA    | Environmental Education Association of Southern Africa                   |
| EECI     | Environmental Education Curriculum Initiative                            |
| EEPI     | Environmental Education Policy Initiative                                |
| EFS      | Education for Sustainability   |
| ESD      | Education for Sustainable Development                                    |
| FET      | Further Education and Training   |
| GET      | General Education and Training   |
| HOD      | Head of Department   |
| IUCN     | International Union for the Conservation of Nature and Natural Resources |
| NCS      | National Curriculum Statement  |
| NEEP     | National Environmental Education Project                                 |
| NEEP-GET | National Environmental Education Project-General Education and Training  |

|         |  |
|---------|--|
| NGO     | Non-Governmental Organisation                                  |
| NQF     | National Qualifications Framework                              |
| PBUH    | Peace be upon him  |
| RNCS    | Revised National Curriculum Statement                          |
| SGB     | School Governing Body  |
| SMT     | School-based Management Team                                   |
| UNCED   | United Nations Conference on Education and Development         |
| UN-DESD | United Nations Decade of Education for Sustainable Development |
| UNEP    | United Nations Environmental Programme                         |
| UNESCO  | United Nations Education Social and Cultural Organisation      |
| UNGA    | United Nations General Assembly                                |
| WCED    | World Commission on Environment and Development                |
| WWF     | World Wildlife Fund  |



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# CHAPTER 1: ORIENTATION TO THE STUDY

## 1.1 INTRODUCTION

Despite the fact that Islam remains a powerful social force in the lives of many of its adherents, contemporary scholars lament the silence of Muslims on the environmental question...The educational landscape of Islam is frequently put forward as the primary arena for imparting its ecological teachings (Mohamed, 2012: i)

With the widely documented global concerns about issues such as global warming, diminishing water supplies and wildlife extinction, the need for relevant environmental education (EE) in the contemporary era cannot be ignored. Although EE has been a common topic for several decades, with its principles and goals well stated (in Stockholm, 1972; Tbilisi, 1977; Agenda 21, 1992), the environmental problems still prevail in the present decade. To this effect, Palmer (2003:03) posits that the concern of the present generation should be to establish what is going on presently in pursuit of providing EE for sustainable development to the world's citizens. One way of responding to Palmer's suggestion is to observe the processes of EE in schools to understand how EE, which is part of school curricula in the context of South Africa, is implemented. As a Life Sciences and Islamic Studies teacher, with teaching experience at two different South African Muslim schools for the past ten years, the issue of the implementation of EE principles, particularly within the Islamic context and discourse, attracted my attention.

The implementation of EE, as a component of schools' curricula in South Africa, is one of the chief aims of the National Curriculum Statement (NCS) as stated in the Curriculum Assessment Policy (CAPS) document. EE implementation forms part of the general aims of every subject in the General Education and Training (GET) as well as the Further Education and Training (FET) bands. Therefore, all schools in South Africa ought to be well informed about the manner in which EE is to be implemented therein. However, literature suggests that the proper implementation of EE in some schools locally and internationally poses a challenge due to the constraining factors that are

found within such schools (Carvello, 2009:54; Kimaryo, 2011:18; Nsubuga, 2011:115; Reddy 2011:16). Other schools enjoy a richer quality of EE implementation due to enabling factors found in such schools (Carvello, 2009: 60; Dymment & Hill, 2015:24; Evans, Whitehouse & Gooch, 2012).

Muslim schools have rapidly mushroomed across South Africa. The Islamic discourse strongly advocates for the protection and welfare of the physical environment (Khalid, 2002). The Islamic discourse also contains significant indigenous knowledge constructs that have, in the past, formed the basis to assist the Muslim community to use planet earth's scarce resources efficiently. These constructs may be found either in the sacred texts of the primary source of the Islamic discourse known as the noble Qur'aan or in the Prophetic traditions and sayings (Ahaadith) of the holy messenger of Allah (God), the Prophet Muhammad (peace and blessed be his soul).

Islam also advocates the practical implementation of knowledge, skills and values for the benefit of society as a whole. Ahaadith are filled with encouraging advices for Muslims to take active steps to care for the environment. Khalid (2002:02) cites Abu Bakr's (the first Muslim Caliph) instruction to the Muslim armies not to destroy animals, crops and trees as among the indications of Islamic respect for the environment.

Like the Masjid (Muslim place of worship), the school also plays a significant role in any Muslim community (Mohamed, 2012:03). Not only does the school serve as the hub of Muslim community activity, but it is also viewed by most Muslims as the place wherein young Muslims are nurtured into responsible and productive members of the community as well as active citizens of the country. In this qualitative case study, I investigated the extent at which this goal of school education was being practiced in Muslim schools in Gauteng Province, particularly in relation to EE. I investigated the factors that enable and constrain the implementation of EE in these schools. Understanding these factors will aid teachers and managers of Muslim schools to enhance the quality of EE implementation therein.

This chapter is composed of eight sections, namely; the background as well as the rationale for embarking on this study is presented. A brief introduction to the conceptual

and theoretical framework is discussed. The context of the study is presented to indicate the salient features of a typical “South African Muslim school” and how such schools differ from other schools. I present the focus of the study that illustrates the manner in which EE is implemented in South African Muslim schools, thereby excluding other forms of schooling from the study. In addition, the problem statement and research questions are formulated. These are followed by the presentation of the aim and objectives of this investigation. The research design adopted in the study as well as, the ethical considerations that were undertaken prior to the study is briefly described. Finally, an outline regarding the demarcation of the chapters is also presented.

## **1.2 BACKGROUND TO THE RESEARCH**

Both globally and nationally, humans are faced with an entire set of environmental challenges. Amongst these challenges are the deteriorating nature of the global physical environment and the depletion of the earth’s natural resources. These challenges are in turn related to global socio-economic concerns such as global climate changes, human health and the sustainable supply of food and water (Potter, 2010:27). South Africa is also faced with many environmental issues. For example, Loubser, (2005) has cited water, soil and air pollution together with the loss of biodiversity and poverty as some of the environmental issues facing South Africa. Low (2005:174) argues that South Africa is the 15<sup>th</sup> largest industrial emitter of greenhouse gases globally and the seventh largest developing country emitter. These emissions are relatively significant from a global warming and public health perspective. It is in this regard that Khan (2009:30) suggests that the campaign towards environmental conservation needs to be driven in Muslim Schools in South Africa. Like Khalid and O’Brien (1992:34), Khan (*ibid*) is of the opinion that a healthy environment is imperative to enjoy a healthy way of life.

The narrative of Islam has an important role to play in the resolution of present environmental issues. The Qur’aan serves as the primary source of guidance for Muslims. Mohamed (2012:55) maintains that the Qur’aan emphasises the significance of the relationships that human beings share with Allah (God), their fellow human-

beings and the natural environment. Mangunjaya and McKay (2012:288) agree that Muslims through their beliefs and doctrines may positively contribute to finding solutions to environmental issues. Furthermore, Mohamed (2012:126) regards education as pivotal to the development of Islamic thought and personality. Therefore, in order for Muslims to positively participate in the global ecological crisis, it is important for Muslims to understand and apply the Qur'aanic ecological injunctions to the current environmental realities. As such, the Muslim school has an integral role to play in the dissemination of the Qur'aanic teachings on environmental care. Therefore, EE implementation in these schools will be instrumental in the development of an Islamic approach to environmental concerns.

Therefore, EE in Islam, as well as in Islamic Education, plays an important role in its empowering of people, and young people in particular, to develop positive attitudes toward the environment. The Earth is regarded as a trust given by Allah and Muslims therefore regard themselves as trustees or managers of affairs of Earth, not as its owners (Loubser 2005:98). In the following section, the context in which this study was conducted is presented.

### **1.3 CONTEXT**

The context within which this study took place was in multiple sites of South African Muslim schools. The fact that these schools are located within South Africa distinguishes them from schools located in other countries because South Africa is one of the fewer countries in the world where all religions are practiced freely and without prejudice. Post-1994 saw the creation of a large number of privately-managed community-based schools that offer specialised curricula adapted to the South African National Curriculum Statement (NCS) in addition to Religious Instructions. Among such schools, there are the numerous Muslim schools. Therefore, it would be expected that Muslim schools apply the Islamic values in those schools without restrictions, particularly in relation to EE which happens to form part of their value systems.

It is necessary to define this concept of "Muslim school" so that it is distinguished from other Islamic institutes of learning. The term "Muslim school", in the South African context, refers to such independent (privately owned and managed) schools that are



owned and managed by members of the South African Muslim Community (Fataar, 2003:01). In this regard, Mohamed (2012:219) states that the term “Muslim schools” refers to the recent phenomenon of schools that adhere to the ethos of the Muslim faith. These schools operate in both the primary and secondary schooling phases. Such schools aim to fulfil an important function in the Islamic educational landscape. In addition to the learning opportunities in the Islamic sciences, Muslim faith-based schools adhere to national curricula, many of which incorporate EE. Mohamed (2012:232) further explains that although many Muslim schools in South Africa are registered as independent schools, they however also receive limited state-funding and adhere on the whole to the national curriculum.

Mohamed (2012: 219) suggests that since the 1980s, there has been an upsurge in the number of Muslim schools in the Western world. As a result, many non-governmental organisations (NGO) that represent the interests of Muslim schools have been established. These NGOs coordinate some of the activities of Muslim schools. Such NGOs include the Council of Islamic Schools (CIS) that was established in the United States of America and the Association of Muslim Schools (AMS) that was established in the United Kingdom and in South Africa.

Mohamed (2012:241) states that the Association of Muslim Schools - South Africa (AMS-SA) was established in 1989 and provides a range of services to Muslim Schools such as, inter-alia, teacher professional development workshops, inter-school activities and curriculum development opportunities. In addition, AMS-SA organises annual regional and provincial tournaments in the sport disciplines of athletics, soccer, cricket and netball for Muslim schools in South Africa. Teacher development is made possible during the annual AMS conference held in the different provinces. This conference has breakaway workshops wherein educators teaching at Muslim schools may discuss issues such as discipline, professionalism, content delivery of the curriculum and the various challenges that generally affect them while teaching in a Muslim school. In addition to this, Muslim school principals also meet regularly to discuss management issues that affect their schools. It can be assumed that environmental issues are among those discussed in such meetings.

According to Mohamed (2012: 219), although most Muslim Schools in South Africa are privately-managed, yet such schools have been approved by the South African National Department of Basic Education. Therefore, Muslim schools are usually perceived by many Muslims as an alternative to the public education system (Fataar, 2003:02). Niehaus (2008:20) maintains that many Muslim schools in South Africa were established in the 1980s. Niehaus (*ibid*) further describes that the primary aim of these schools as being the provision of an academic education. This academic education would thereby equip learners attending Muslim schools with the necessary skills that are currently required to overcome the “demands of a globalised world”. Such an empowerment would occur “within a distinct Islamic environment”.

Fataar (2003:01) posits that Muslim schools are examples of ways in which the Islamic discourse is given expression in the South African context. Furthermore, Fataar (2003:02) discovered that most Muslim schools were established on the pretext of the decadent and degenerative morality and quality of education provision in public and township schools. Merry and Driesen (2005:419) believe that although in practice, most Muslim schools continue “to borrow heavily from surrounding public and private schools for ideas” pertaining to various school functions these schools implement some form of EE into their school policies and curricula. However, as explained earlier, the underlying principles in Muslim schools behind such policies and curricula chiefly relate to the theological discourse of Islam. This discourse is theistic in its approach. In such an approach, the natural environment is considered as the creation of God. There is also a very strong connection between religion and ecology in the theistic approach.

Furthermore, Muslim schools offer a slightly different curriculum. In addition to the national curriculum requirements, these schools also offer extra subjects in the Islamic Sciences. For example, the following twelve subjects are offered in the Further Education and Training phase (FET) phase: English Home Language; Afrikaans First Additional language; Arabic Second Additional Language; Mathematics; Mathematical Literacy; Accounting; Business Studies; Life Orientation; Life Sciences; Physical Science; Economics; Computer Applications Technology. In addition to these subjects, there are several Islamic Sciences offered at the Muslim schools. These include

subjects such as Qur'aanic Studies; Islamic Jurisprudence or 'Fiqh'; Islamic History; Prophetic Traditions or 'Ahaadith' and Qur'aanic Exegesis or 'Tafseer'. In total, a typical Muslim school would therefore offer approximately 17 different subjects only in the FET phase. A typical daily time-table, excluding Fridays, would consist of 13 half-hour periods. Fridays usually have 10 half hour periods due to the early dismissal for special prayers held Fridays known as the 'Jumuah Salaah' in Islamic terminology. Therefore, in a typical Muslim school, on average, 17 subjects are taught in 62 periods in the FET phase. Learners in a Muslim school also are able to choose between certain subjects, such as, for example between Physical Science and Economics. This will naturally create a split between these choice-subjects and then they share a common period.

This study focused primarily on the implementation of EE in South African Muslim schools. In so doing, other privately-managed schools belonging to other religious denominations were thus excluded from the study. The chief reason for this was due to my own experiences as a teacher teaching at two different Muslim schools. I taught and still teach Life Sciences and Islamic Studies in those schools. Hence my familiarity with the Qur'aanic stipulations on the manner in which the natural environment ought to be cared for by Muslims, afforded me the ideal opportunity to carry out this study. Muslims are (as will be seen in chapter three) encouraged to not only care for the physical environment but also to collectively try to resolve global ecological issues by creating innovative, non-conventional and sustainable solutions to environmental crises. Therefore, for this to be possible, the correct attitude towards the environment needs to be fostered within the learners attending Muslim schools. EE implementation in such schools needs to be promoted if it is to play any role in shaping the attitudes of the young minds attending Muslim schools. My attention now focuses on the way in which the main and subsidiary research questions were formulated prior to embarking on this investigation.

## **1.4 PROBLEM STATEMENT**

As indicated in section 1.2 above, teachers in some schools in South Africa face challenges in implementing EE in their curricula. This is regardless of the specific

stipulations of the NCS in the Curriculum Assessment Policy Statement (CAPS) and the previous curricula statements about EE integration in curricula. However, in some schools, teachers seem to be doing something towards the implementation of EE. While there is such research which indicates the challenging and supporting factors towards the implementation of EE in South African schools, little has been done about such factors in relation to Muslim schools in the Gauteng Province. This silence is a problem because, as indicated in both section 1.2 and 1.3, teachers in Muslim schools are supposed to work not only under the guidance of the national education policies but also that of the Islamic value systems provided in the Qur'aan and Prophetic Traditions. It is through the application of both the national education policies and Islamic values that Muslim schools may be able to contribute in developing responsible citizens towards addressing the present environmental concerns for sustainable development. However, it may not be assumed that teachers in Muslim schools are able to implement EE even though such guidance is provided in policy and by the Qur'aan and Prophetic Traditions. Thus, without research on the practices of teachers in Muslim schools, the factors affecting the valuable possible contributions that these schools may make or are making through EE for sustainable development may not be realised. This study purposed to contribute knowledge in this regard guided by the following research question.

The main research question:

- What are teachers' experiences of the implementation of environmental education (EE) in the selected Muslim schools in Gauteng Province, South Africa?

Sub-questions:

- How do teachers teaching in selected Muslim schools in Gauteng Province understand the concept 'environment'?

- How do teachers teaching in selected Muslim schools in Gauteng Province understand the concept 'environmental education' (EE)?
- What do the teachers perceive as enabling factors regarding the implementations of EE in selected Muslim schools in Gauteng Province?
- What do the teachers perceive as constraining factors regarding the implementations of EE in selected Muslim schools in Gauteng Province?
- How can the constraining factors be addressed to allow the implementation of EE in selected Muslim schools in Gauteng Province?
- How can the enabling factors that allow for the implementation of EE be sustained in selected Muslim schools in Gauteng Province?

## **1.5 AIM AND OBJECTIVES**

The aim of this study was to analyse the experiences of the teachers teaching at Muslim schools regarding the implementation of EE at their schools. The objectives of this study were as follows:

- To examine the understandings that the teachers teaching at Muslim schools in Gauteng Province have regarding the term 'environment';
- To examine the understandings that the teachers teaching at Muslim schools have regarding the term 'environmental education';
- To examine factors that enable EE implementation in Muslim schools;
- To examine the factors that constrain the implementation of EE in such schools;
- To explore ways in which the constraining factors in the selected Muslim Schools can be addressed to allow the implementation of EE in these schools; and
- To determine the ways in which the enabling factors that allow for the implementation of EE in these selected Muslim Schools can be sustained.

This study was premised on the assumption that if there were teachers that were not able to implement EE in the Muslim schools, findings from this study might provide them with the guidelines as suggested by fellow teachers implementing it in similar schools. If none of the sampled schools were implementing EE, the assumption was that teachers'

reflections and /suggestions during the research process might shed light on how the constraining factors might be addressed. In addition, the findings might provide guidelines on how the enabling factors might be sustained. The processes followed during the course of the study are discussed in the following section.

## **1.6 RESEARCH METHODOLOGY**

McMillan and Schumacher (2010:08) define research methodology as the various ways in which a researcher collects and analyses data. This process is systematic and purposeful. Research methodology includes a research design, a research approach, sampling methods and data collection methods. These are the issues on which this section is focused.

### **1.6.1 Research paradigm**

This study followed an interpretive paradigm. Interpretivism is described as a paradigm in which knowledge is generated through direct interaction with information rich participants and interpretation of their experiences as presented by them in their own settings (McMillan & Schumacher, 2010:06). This research paradigm is discussed in more detail in Chapter 4.

### **1.6.2 Research design**

McMillan and Schumacher (2010:102) describe the term research design as a blueprint or strategy that the researcher will employ to choose the research sites, the participants and the data collection procedures. Therefore, research design also identifies the conditions and contexts under which data were collected during the study.

This study followed a descriptive case study design. According to McMillan and Schumacher (2010:344), a case study is regarded as an in-depth study of a bounded system of cases which involve theories and practices. This design was chosen in order to gain a rich in-depth description of a special phenomenon, which is the implementation of EE in Muslim schools. The details of the research design employed during this investigation may be found in Chapter 4. In the next section of this chapter, I discuss the research approach of this study.

### **1.6.3 Research approach**

This study adopted a qualitative research approach. This approach emerges from the interpretivist paradigm and as such, allows for a closer interaction between the researcher and the participants (McMillan & Schumacher 2010:06; Strauss & Corbin 2008:12).

### **1.6.4 Selection of participants**

According to the official website of the Association of Muslim Schools, South Africa (AMS-SA), there are 25 affiliated Muslim schools that are currently operating in the Gauteng Province. These schools span into the various metropolitan regions within the province. Therefore, these 25 schools formed the total population from which this study's sample was selected. Employing the convenient sampling technique, five Muslim schools located in the Gauteng Province were selected. In addition, the participants in this study were the teachers teaching in Muslim schools who provided a deep, rich analysis of their own experiences about implementing EE at their schools. These information-rich teacher participants were purposefully selected from these schools.

In this study, the phenomenon that the information-rich teachers are experiencing is the implementation of EE in the schools in which they are teaching. Teachers who facilitate a subject that has an EE focus critically designed into its curriculum were also eligible for participation. Such subjects include Life Sciences, Life Orientation, Islamic Studies, Social Sciences, Geography and the Natural Sciences. It is also noteworthy that owing to the scarcity of teachers in privately-managed schools, some teachers teach more than one subject in such schools. In addition, any teacher that is currently part of an enviro-club or an enviro- committee was also eligible to participate in the study. It was also envisaged that at least one specific participant at each site preferably be a member of the School-based Management Team (SMT). This was due to the fact that the implementation of any curriculum, such as EE, in any Muslim school, is first decided by the managers of the institution.

### **1.6.5 Data collection**

There are several major methods for gathering data in qualitative approaches that have been identified in literature. These include, inter-alia, observation, interviews, questionnaires, document review, and the usage of audio-visual materials (Harris, Gleason, Sheean, Boushey, Beto & Bruemmer 2009:85; McMillan & Schumacher, 2010:350). Three strategies were thus employed to collect data in this investigation.

Firstly, semi-structured, face-to-face interviews were conducted with the selected teacher-participants to elicit a richer descriptive understanding of the implementation of EE from the perspectives and experiences of the participants. In addition, all interviews were tape-recorded.

Secondly, field observations were conducted at all the sites that were visited. This form of data collection also allowed for a deep understanding of the context and possible behaviours in those settings in relation to the implementation of EE (McMillan & Schumacher, 2010:350). Therefore, I observed the physical environments of the Muslim schools and how these environments enabled or constrained the implementation of EE therein.

Document analysis was employed as a third strategy to collect data (McMillan & Schumacher, 2010:420). The Qur'aan and Prophetic Traditions (known as Ahaadith in Islamic terminology) were analysed so as to discover the relationships that exist between EE and Islamic ethics that relate to environmental care. I also analysed national curriculum policy statements such as the CAPS document to examine its content in relation to the implementation of EE.

### **1.6.6 Data analysis**

Zhang and Wildemuth (2009:02) state that in qualitative research, data analysis involves processing raw data into categories or themes that emerge from such data. A thematic analysis of the collected data was therefore conducted in this study (Vaismoradi, Turunen & Bondas, 2013:400). Prior to this, the audio field notes were transcribed. Thereafter, the individual segments of data were coded and then grouped into categories. From the categories, themes were then developed. An example was the



division of all the enabling factors of EE implementation into a separate category from that of the constraining factors.

### **1.6.7 Trustworthiness**

Loh (2013: 1) maintains that for any study to achieve its rigour or quality, issues of trustworthiness need to be addressed. This study tried to establish credibility by including more than one school (multiple sites) during data collection. To gain multiple perspectives as a way of increasing objectivity in the study, more than one participant from each site was requested to participate. Moreover, these participants teach different subjects within each school and some of these participants hold different positions within the management structures of these schools.

In this study, credibility was also obtained through multi-vocality when the informants, who are the teachers teaching at the Muslim schools, began to express their own positive and negative experiences in trying to implement EE at such schools. Qualitative research may often depend on member checking by allowing the participants in the study to correct errors and to assess the outcomes of the study (Reilly 2013:01). Therefore, the participants were required to peruse through their full interview transcripts after the interviews so as to check if they were correctly captured and that their contributions were not misinterpreted. In this way, credibility was also attained through the process of member checking.

### **1.6.8 Ethical considerations**

McMillan and Schumacher (2010:15) maintain that since research in education is mostly focused on human behaviour and human activities, educational research must strive to protect the rights and privacy of participants of such studies. Firstly, in this study, ethical clearance was obtained from UNISA College of Education Research Ethics Committee (CEDU REC). It is only after such clearance was obtained that data collection commenced. Secondly, since Muslim schools are registered as Independent Schools within their provincial departments, no permission to enter their sites was required from the Gauteng Department of Education. However, I had to approach the School

Governing Bodies (SGB) of the relevant schools to seek permission to enter their school campuses and to use these as my research sites.

Permission from the respective school principals to allow the teachers to participate in the study was also sought. Furthermore, the principals as well as teachers were asked to participate in the study. Each participant was requested to sign a declaration of informed consent, and was assured of anonymity throughout the research process. Each school was also given a pseudonym during the data analysis phase in order to protect their identities and to further protect the identity of participants. The participants were also ensured of confidentiality of the information they shared during the study as well as their right to withdraw from the study whenever they wished to do so.

## **1.7 CONCEPT CLARIFICATION**

The major concepts in this study included education, environment, Environmental Education (EE), Education for Sustainable Development (ESD) and Eco-theology. In this section, these concepts are briefly described in relation to the context of this study.

### **1.7.1 Education**

In this study, I begin with a discussion on the concept of 'education'. According to Rømer (2011:767), among the challenges when discussing the theory of education is that learning may only take place in some setting of "social order". In this social order, a comparison is often made between what constitutes knowledge and what does not. Hall and Delport (2013:01) believe that the 21<sup>st</sup> century has impacted on the religious and social functions of the present day young minds. Therefore, many scholars have called for a redefinition of education. In this particular study, education encompasses a developmental process that may occur throughout an individual's life through the acquisition of necessary knowledge, skills and values related to a specific or a number of concepts regardless of whether the individual has acquired these knowledge, skills and values through the individual's interaction with other human beings or not.

## **1.7.2 Environment**

Following Reddy (2011:12) and O'Donoghue (1993), environment in this study is understood as a multi-dimensional phenomenon. This phenomenon is composed of the bio-physical, socio-economic and political dimensions. Furthermore, these dimensions should be found in all the disciplines of the curriculum. Mohamed (2012) also regards spirituality as another dimension to the term environment. Chapter 2 (section 2.5) discusses these dimensions in more detail.

## **1.7.3 Environmental Education**

The term “environmental education” (EE) is a very broad concept (Hebe, 2009:09). This study draws on the definition of EE by Kimaryo (2011:24) who regards EE as “education that helps individuals to become more knowledgeable about their environment”. According to Kimaryo (2011), EE also aims to “develop responsible environmental behaviour and skills” within learners so that these learners may “improve the quality of the environment”. Furthermore, EE is also a multi-disciplinary concept as it educates learner not only ‘about’ the environment but also ‘for’ and ‘in’ the environment (Dube, 2014:135; Fien, 1993; Kanyimba, 2002:12).

## **1.7.4 Education for Sustainable Development**

Buckler and Creech (2014:20) regard Education for Sustainable Development (ESD) as education that “empowers society to make informed decisions for environmental integrity, economic viability and a just society for present and future generations”. According to Buckler and Creech (2014), ESD also respects cultural diversity. The year 2014 marked the culmination of the United Nations Decade of Education for Sustainable Development (Bonnet, 2013:253; O'Donoghue, 2014:08). According to Lotz-Sisitka (2011:62), in the South African context, ESD is often used interchangeably with EE. Chapter 2 (section 2.2.1) discusses this concept in more detail.

### **1.7.5 Eco-theology**

In section 1.3, it was observed that the context of this study is that of Muslim schools. Such schools adopt the ethos of the Islamic theological discourse. Therefore, it was necessary to include a discussion on eco-theology. According to EE scholars, eco-theology is an emergent, multi-voiced sub-field that perceives the bio-physical environment as a creation of God (Hrynkow, Byrne & Hendzel, 2010:310; Munteanu, 2010:333). Furthermore, Jenkins and Chapple (2011:458) regard the relationship between religion and ecology as very interactive and diverse. More details about this sub-field will be discussed in Chapter 3 (section 3.5).

## **1.8 CHAPTER DIVISION**

This dissertation is composed of six chapters. Chapter two contains the review of literature related to the major concepts that framed this investigation. Chapter three focuses on the theories related to EE implementation in the Islamic discourse and Muslim schools which provided the theoretical framing of the study. Chapter four discusses the research methodology employed during this investigation, specifying the research design, research approach, sampling and data collection methods. In Chapter five, the research findings are presented in themes according to the research questions that guided the research process. Chapter six is a discussion of findings of EE implementation in Muslim schools and conclusions made therefrom.

## **1.9 SUMMARY**

In this chapter, I introduced this study by discussing the background and rationale for undertaking this investigation into the implementation of EE in Muslim schools in Gauteng Province. I also briefly commented on the unique context, being that of the Muslim school, in which this study was conducted. This chapter also lends its support to the reasons of the focus and purpose of the investigation being carried out in Muslim schools and not in any other similar type school. I also focused on the main and

subsidiary research questions that led to the way in which I formulated my problem statement as well as how these questions formed the basis of the aim and objectives of the investigation. The various theories and concepts that framed my investigation were also identified. I also briefly discussed the research design employed during the investigation as well as the ethical considerations that were needed prior to the investigation.

Finally, a brief outline of the remaining chapters of the study was provided. In the next chapter, I begin with the review of literature that relates to my investigation.

# **CHAPTER 2: LITERATURE REVIEW ON CONCEPTS RELATED TO THE IMPLEMENTATION OF ENVIRONMENTAL EDUCATION**

## **2.1 INTRODUCTION**

In Chapter 1 the guiding research questions, the aims and the objectives of this study were presented. I also stated the factors that motivated the initiation and execution of this study, as well as the research design and research methods. A review of literature related to this study's topic is the focus of this chapter. Hebe (2009:01) states that a literature review may be described as a selection process of published and unpublished materials carried out by the researcher as a support base during the development of the research project. Hence in this chapter, literature that is reviewed related to the following major aspects. Firstly, the defining features of EE and its relationship to Education for Sustainable Development (ESD) is analysed. Then, secondly, the discussion is focussed on the historical development of EE, both in the international and local contexts. Finally, a discussion of the different dimensions of environment: bio-physical, socio-economic and political in relation to EE is presented. I begin with an analysis of the definitions related to EE as found in literature.

## **2.2 DEFINING ENVIRONMENTAL EDUCATION**

Among the issues that need attention in the present South Africa are the people's attitudes and behaviours towards the environment which were, in some instances, caused by social inequalities in the past (Madikizela-Madiya, 2012:74; Madiya, 2009). Some problems may be the result of environmental illiteracy. According to Hebe (2009:17), EE plays a significant role in the promotion of environmental literacy. In addition, Hebe (2009:17) feels that teachers should be well equipped to assist learners to become environmentally literate through the implementation of EE.

Le Grange (2002:83) states that in recent decades, a proliferation of knowledge related to environments, their related problems, issues and risks, has been witnessed. He argues that the conceptions of EE as well as education's response to environmental issues and risks have changed since the term was first described by Stapp and his

colleagues at the University of Michigan in the late 1960s. The definition of EE and the key principles related to EE keep changing. For instance, the Tbilisi principles formulated in 1977 (UNESCO-UNEP, 1978) tended to take a value-neutral stance on environmental issues whereas the 1992 UNCED NGO principles (UNESCO-UNCED, 1992) see EE as more value-based and as an act of social transformation.

Conceptually, EE obviously combines 'environment' and 'education'. Thus to define EE, one has to first dissect the concept and understand the meaning of each of its two parts. This dissection begins with the discussion of the concept 'environment'. According to Hebe (2009:09), the concept environment is very broad and it has been assigned various meanings by different people. The assigning of meanings to the concept is done in line with individuals' perceptions and fields of interest. For example some, according to Kanyimba (2009:22), describe the environment as an area that "circumscribes human-beings and non-human-beings" and is therefore a physical place wherein living and non-living entities co-exist. It can also be described as the "natural conditions in which people and animals live" (Kanyimba, 2009:22). According to Kanyimba (2009:23), this definition is incomplete as it only refers to the earth's natural resources excluding the economic impact on the environment.

Shobeiri, Sarmadi, Sahebamee and Bassiri (2013:89) define environment as the place for the manifestation of human societal life. These authors maintain that the environment has been always of substantial importance in social growth and human development. They further explain that in the present century, as man faces different environmental crises, various societies are looking for a substantial approach, that is to say, the all-inclusive and comprehensive approach that can change the interaction method between humans and the natural environment (Shobeiri, *et al.* 2013:90). The definition of the environment by these authors suggests that there is always a human element on the environment which needs to be acknowledged as the concept is being defined. In other words, the definition of Shobeiri *et al.* (2013) may be seen as responding to Kanyimba's (2009) contention that the mention of the natural aspects only is incomplete in the definition of the environment. A more comprehensive definition is that which is given by O' Donoghue (1995:16) who suggests that 'environment'

encompasses “social, political and biophysical realities that act on natural conditions”. These dimensions of the environment are discussed in detail in section 2.5. Focus in this section is paid next to the concept of ‘education’.

According to Bonnet (2013:251), the concept of education may be used in different ways. The concept may be used in a normative or a descriptive sense. Bonnet (*ibid*) cites the example of global “education systems” to illustrate the descriptive nature of education. For example, the phrase ‘the education system of South Africa’ is a descriptive way of using the term ‘education’. The normative sense of education deals with the “intrinsic values” attached to education. It is in this normative sense that education is perceived as a process that ventures beyond mere enculturation of young people in to society. Furthermore, the normative sense of education may be employed to initiate cultural changes in a manner that is engaging and respectful to the individuality of the learner.

Hebe (2009:13) regards education as a conscious or unconscious developmental process that occurs in an individual, as manifested in his or her behavioural processes, as a consequence of his or her interactions with the human and non-human environment. In other words, according to this author, education is an observable process. Through observing people’s behaviour their education level may be detected.

Kanyimba (2009:23) defines education as a process in which an individual’s knowledge, understanding, skills and actions are enhanced for the individual’s own benefit as well as to the benefit of others in the social, economic and ecological spheres of life. Therefore, if the observable education as suggested by Bonnet (2013) is not favourable in any sphere of life, it is possible to initiate change through the processes suggested by Kanyimba (2009). This alteration meant to enhance skills, knowledge and understanding, may be achieved through activities that interactively engage with children (Fraser, Loubser & Van Rooy, 1990:186). However, Fraser, *et al.* (*ibid*) believe that such activities are carried out by an adult who possesses more advanced knowledge than the child. They should be activities that are purposeful and insightful with the aim of developing the child into becoming a socially-responsible and



intellectually independent individual in society (Fraser, *et al.* 1990:186). However, the assertion that regards education is dependent on a more knowledgeable adult can be disputed. From my experience as a teacher, I have found that many children do not always require the intervention of an adult to learn. Learners sometimes learn by themselves merely by interacting with their environment through trial and error and sometimes they learn from their peers. Therefore, it can be said that the manner in which education is acquired depends on whether it is formal or informal education. Formal education as a structured process depends, as suggested, on the guided process by the more knowledgeable individual than the learner.

Wolters (2010:02) has found that there have been efforts in the 21<sup>st</sup> century to develop competencies so as to improve and to reform education models and systems. These efforts are meant to ensure that learners are prepared to be effective workers and citizens in the future. One such initiative is the 21<sup>st</sup> Century Competency (21CC) framework (Ananiadou & Claro, 2009; Wolters, 2010:02). The 21CC framework focuses on developing competent skills, knowledge constructs and values that will enable learners to cope with the demands of schooling, the workplace and life in the 21<sup>st</sup> century.

Low (2005:310) argues that education is a very powerful tool for achieving social change. However, the capacity of any education programme to deliver information and training is not infinite. Low (*ibid*) further opines that the failure to provide an appropriate education will reduce the opportunities for the least developed communities to participate and benefit from these changes. He adds that it is only ethical that all communities be informed about the changes that human activities are causing to the atmosphere and its consequences. Therefore, according to Low (2005:310), those communities endowed with the resources to disseminate the information via education programmes are morally obliged to do so. Thus, Low's argument succinctly describes the climate of the dispensation of education in South Africa. During the era of apartheid, many historically disadvantaged communities were abjectly denied the opportunity to fully participate in environmental issues that affected them either directly or indirectly. (Madikizela-Madiya, 2012:74; Madiya, 2009).

LeFay (2006:36) believes that education can and must be redefined. However, LeFay agrees with Low (2005) that this redefinition must allow education to develop into a transformative process that, will in turn, allow learners to study and view the world holistically so that they are able to protect their planet.

Therefore, in this study, “education” is viewed as the acquisition of necessary knowledge, skills and values related to a specific or a number of concepts, by any individual. This is regardless whether the individual has acquired these knowledge, skills and values through the individual’s interaction with other human beings or not. Therefore, education is a developmental process that may occur throughout an individual’s life and in most cases will result in some form of empowerment and transformation of the individual acquiring it.

EE then combines these two concepts, environment and education, even though it is a complex and ambiguous concept with no fixed definition (Le Grange, 2002: 83). When defining EE, Le Grange (2002:83) also warns about the danger of it being rendered meaningless if the definition is too vague. Thus, the term EE has always been debatable. According to Hebe (2009:14), the concept of EE has different meanings for different people and, thus, there is a definitional problem associated with this concept. Hebe (2009:15) further defines EE as:

The process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness between man, his culture, and his biophysical surroundings.

It was during the “International Conference on EE” held in Moscow, in 1987, that EE was succinctly defined. EE was described as being a process wherein individuals and the community receive an “awareness of their environment” (Knoll, 1997:18). These communities and individuals will in turn “acquire the necessary knowledge, skills, experiences as well as the willpower to act, both individually and collectively, to solve the present and future environmental issues”(Knoll, 1997:18).

In 1990, the United Nations Education Social and Cultural Organisation (UNESCO), held the “World Conference on Education for All” in Jomtein. It was during this

conference that EE was perceived as an interdisciplinary concept, dominated by the belief that education fosters a sense of responsibility for the environment (Knoll, 1997:18). Irwin (1991:01) states that there has been considerable effort internationally to clarify and delineate the definition of EE. This has led to a great deal of debate both in environmental as well as educational literature at international forums.

Schreuder (2002:138) also agrees with Irwin (1991:01) regarding the redefinition of EE. They both feel that the EE community has tried on numerous occasions to redefine this important field of education. However, these attempts have still allowed the physical environment to remain bereft of any improvements. It has also allowed for the creation of false expectations and the deepening of the environmental crisis. The redefinition of EE has also led to the adoption of certain key concepts and the search for new icons and formulae. These innovative concepts were embraced without them being analysed objectively in the false hope that they would solve the failures of past ideas.

According to Kgatitsoe (2002:10), EE has called for an education that is holistic, broad and cross-curricular. It also promulgates the integration of knowledge and skills. Kgatitsoe (2002:16) feels that EE connects directly to the quality of life and such an education that regulates the rhythm of every social fabric, including politics, economics, culture or entertainment. He also believes that EE is a pivot around which man's values, norms, ethics, morals, behavioural patterns, interactions, sustainability, attitudes, perceptions and the general relationship between man and the natural environment should grow. In this regard, Panday (2002:01) states that EE has evolved into becoming an integral component of a holistic education which is necessary for the future sustainability of earth and its variety of life forms. Similarly, Loubser (2005:160) regards EE as taking place over a wider front. According to him, it is imperative that both the formal and non-formal education sector combine forces and work jointly toward the resolving of environmental concerns and risks.

Le Grange (2002:83-84) explains that there has been the unanimous acceptance of three broad dimensions or approaches in respect of EE and its relationship to education itself (see also Kimaryo, 2011). These dimensions include EE being defined as either education 'about', or education 'in' (or 'through') and education 'for' the environment.

Education about the environment relates mostly to the acquisition of knowledge about natural systems and processes. According to Kanyimba (2009:27), this dimension of EE refers to the processes through which knowledge and understanding of the environment is generated through environmentally-related content in other core and foundation subjects. It is also concerned with providing a cognitive understanding of environmental issues, challenges and crises. In my study, the interest is on attaining information about the methods that teachers teaching in Muslim Schools in Gauteng Province, South Africa, employ to provide education about the environment for their learners.

Education “in”, or “through”, the environment focuses mostly on learners’ experiences in the environment. These experiences will eventually serve as a means of developing the learner’s capabilities. They will also seek to clarify the learner’s value-capacities. Kanyimba (2009:27) explains that in this dimension, the environment itself is used as a tool for learning about the environment, with the focus being on the development of environmentally-related actions and skills. The environment is used as a resource for direct experience, inquiry and investigation. This resource also enables the development of skills in communication.

Kanyimba (*ibid*) believes that education for the environment is a tripartite concept that encourages the teaching of attitudes, values, skills, and actions needed for the protection of the environment. It is also based on positive action and is concerned with finding ways to ensure the sustainable usage of the environment presently and in the future. This dimension of EE also calls for the search of solutions of environmental problems. It acknowledges the fact that there are conflicting perspectives and conflicting interests with regards to the environment. Education ‘for’ the environment takes into account the diverse cultural paradigms related to the environment. It also plays a key role in informing the choices that humans make and how these choices affect the environment. This type of learning will in turn develop positive values and attitudes within learners. These values and attitudes will hopefully contribute to the humane usage of the earth and its resources. Learners will also begin to positively reflect on the type of behaviour that is required to promote sustainability.

Strife (2010:188), in offering a definition for EE, strongly advocates that the EE discourse should go beyond its focus of being education for and about the environment. She feels that the path that will create a 'green' mind-set within the psyche of humans and will mostly be realised when EE also begins to focus on the "cognitive, psychological and emotional wellbeing" of modern day society. Therefore, EE should be implemented in all its possible forms. According to Strife (2010:189; cf. Knoll 1997:18), EE will gain better recognition and wider acceptance globally if it is promoted as a needed approach to create a "productive" and "healthy citizenry" that is also "active and environmentally engaged". As a result, EE scholars would need to "rethink the way the EE discourse frames education".

Govender (2011:34) states that EE is a multidisciplinary, inclusive approach that aims to develop an ecological awareness for the environment. EE also is a tool used by teachers to enhance the relationship that their learners share with their natural environment. Learner participation in the decision making of policies and environmental laws designed to protect the natural resources of earth, will become more holistic through the medium of EE, if they are implemented correctly.

Le Grange (2002:83) opines that in the perspective of education for the environment, there is much emphasis laid on action-based discovery learning. Learners are encouraged to become more involved and proactive in finding solutions to resolve environmental problems. Thus this dimension at times seems to be 'overtly critical' of values education, social change and transformation. Le Grange (2002:83) also explains that various discourses have, as a result of the concept of education 'for' the environment, begun to sprout within the field of EE. Among these discourses is the concept of Education for Sustainable Development (ESD) which is discussed in the following section.

### **2.2.1 EDUCATION FOR SUSTAINABLE DEVELOPMENT**

Sustainability and sustainable development are concepts that, although used interchangeably, are defined differently by authors. Sustainability, according to Eilks

(2014:150), was first conceptualised in the field of forestry during the 18<sup>th</sup> century. Particularly, “sustainable development” as a concept has been assigned various definitions by different interest groups (Hebe, 2009:23). The diverse definitions of sustainable development address the “social, economic and environmental (ecological) interests, and core values” of human developments. The term “sustainable development” was initially employed by the World Conservation Strategy (IUCN, UNEP, WWF of 1980) and later reinforced in the Brundtland Report (World Commission on Environment and Development in 1987). This report defines sustainability as:

Meeting human needs in as socially, just manner without depriving ecosystems of their health (WCED, 1987:43)

Therefore, the society will only be able to understand the term sustainability if it is addressed as both a scientific and an ethical issue (Vucetich & Nelson, 2010:539). In addition, Vucetich and Nelson (*ibid*) have found that there is an on-going debate by academics in the field of sustainability regarding whether sustainability concerns economics, ecology or the humanities. However this debate, according to Vucetich and Nelson (2010:539), neglects the ethical aspects of sustainability. Vucetich and Nelson (2010:543) argue that sustainability cannot be achieved merely by global scientific and technological advancements. Ethical principles need to also feature alongside these advancements.

Hebe (2009:24) defines the term “sustainability” as meaning “to keep in existence or to maintain”. The chief concern is to consume only that amount of any resource that enables the resource to regenerate or become renewable. In other words, the resource should not reach or even come close to the “point of extinction”. In sustainable development, people are encouraged to accomplish their current needs without jeopardising their needs for their own future or the future of their forthcoming generations. Another aspect in sustainable development that is also considered when analysing sustainable development is economic growth. In sustainable development, economic growth is not discouraged but rather seen as a platform to further promote sustainability. In other words, economic growth must also intrinsically become sustainable.

On the other hand, ESD came into being when a consensus was reached between various world leaders that sustainable development should be “actively pursued as a global goal” (Hopkins & McKeown, 2002:14). In the same vein, Eilks (2014:150) agrees that many international education policies regard ESD as a global goal. The concept of “education supporting sustainable development” began to emerge from the Brundtland Report. The United Nations General Assembly (UNGA) compiled a comprehensive document on sustainable development known as Agenda 21 (Hopkins & McKeown, 2002:14). By 1992, 40 chapters of Agenda 21 were compiled by the committees set up by UNGA. Chapter 36 (“*Promoting Education, Public Awareness, and Training*”) of Agenda 21 succinctly describes the initial sentiments and ideas related to ESD (UNCED, 1992).

Kanyimba (2009:58) states that the major document that was the outcome of UNCED, held in Rio, was known as Agenda 21. This document served as the prototype for sustainable development for the 21<sup>st</sup> century and was endorsed by 179 heads of state and governments. Agenda 21 outlined a framework for education to incorporate environmental and developmental concerns. It also focused strongly on non-formal education. This document observed that owing to the lack of data available at the time, the negative impact of humans on the environment was to some extent ignored. At the Rio Conference, EE and more especially education itself was recognised as a process wherein societies may attain their optimum potential and an instrument for promoting sustainable development as well as improving the abilities of people to address development and environmental concerns (Kanyimba 2009).

Since the Rio Earth Summit that took place in 1992, ESD has evolved into a unique EE concept. According to Hopkins and McKeown (2002:14), the conceptual framework of ESD was as a result of a series of conferences that took place between 1993 and 1996. These conferences include, inter-alia, World Conference on Human Rights (Vienna, 1993), the International Conference on Population and Development (Cairo, 1994), the World Summit for Social Development (Copenhagen, 1995), the Fourth World Conference on Women (Beijing, 1995), and the Second World Conference on Human Settlements (Istanbul, 1996). Hopkins and McKeown (2002:14) maintain that the

necessity of social development along the lines of economic growth and environmental protection, as well as the promotion of human social advancement was highly emphasised in every conference. The empowerment of women and the delivery of basic amenities for all were among the various issues on the agendas of these aforementioned conferences. All these aspects directly and indirectly are relative to the goals of ESD. The significant role that education holds in realising the goals of sustainability was also identified at these conferences. Hence the need for educating people, especially the younger generation, about the objectives of sustainable development in the form of ESD arose.

Carvello (2009:18) believes that there is a strong need for a sustainability education curriculum that involves the formal curriculum, extra-curricular activities, the school community as a whole and which reflects the ethos of the school in order to implement and cultivate a sustainable community. Each discipline – learning area or subject – must examine and critically analyse environmental and developmental issues from its own perspective or its own context. In addition, it must contrast it with the findings of other disciplines to come to a more holistic response to environmental problems. With such an approach, one can develop best practices for the implementation of environmental and sustainability education among all the role players.

Hopkins and McKeown (2002:18) believe that it is imperative to develop a framework for an ESD curriculum, especially if the ESD curriculum is in its rudimentary stages of implementation. The reason for the development of such a framework for an ESD programme is so that teachers who will implement the ESD programme can begin to understand the underlying concepts and begin to impart it in an appropriate manner (Hopkins & McKeown, 2002:18). In addition, there is a dynamic interaction, between the natural environment, economic growth and sustainability, as well as societal perceptions and actions in the field of sustainable development. In other words, there should be sufficient fluidity between what core values regarding the environment are taught at school level and the extent of the implementation of such values at post school level.

Eilks (2014:156) posits that ESD may be considered as a political aim and may be employed to bring about intensive reform in education. Furthermore, Eilks (*ibid*) has



also found that despite teachers having limited teaching material and limited knowledge-constructs about ESD, their attitudes to implementing ESD remained positive. Kopnina (2012:699) discusses the relationship between EE and ESD. She has found that the literature that has been written concerning this relationship is beginning to expand.

According to Kopnina (2012:699), although EE will not be replaced by ESD, nevertheless ESD will continue to be regarded as one of the significant goals of EE. Kopnina (2012:703) further clarifies the relationship between EE and ESD by stating that earlier forms of EE viewed nature and the environment as being an “object of study”. ESD, on the other hand, perceives the natural environment as a “resource for economic development”. Therefore, teachers who implement EE should also be able to sensitise their learners to the significance of sustainability and sustainable living in addition to environmental care.

Kopnina (2012:701) opines that humans have a “moral obligation” to caring for the natural environment in addition to the concerns of the socio-economic environment. As such, Kopnina (2012:701) argues that the different opinions regarding the “moral obligations” of humans to the natural world (that are related to the EE and ESD discourse) should be made dominant globally. Furthermore, this significance should be present in every individual human-being’s life. Due to the reason that most of the victims of environmental degradation, such as extinct and near extinct plants and animals, occur within the natural environment, it is only fair that awareness about environmental ethics be extended to the natural environment as well. In the following section I look at the history of EE beginning with its international background.

## **2.3 HISTORY OF ENVIRONMENTAL EDUCATION INTERNATIONALLY**

Owing to the innately South African context, within which this study was set, a need to analyse the history of EE, in the context of its global history, its African, as well as its local South African context was realised. The discussion in this section begins by tracing the international history of this discipline.

According to Irwin (1991:01), EE has evolved from being a “surrogate of nature conservation” and a “vague notion of a better quality of life” to a “sophisticated concept of embracing ecological knowledge and understanding”. Irwin (1991:01) further argues that EE also encompasses the understanding of the mechanics behind people-environment relationships, eco-ethics, politics, socio-biology and public participation in decision-making that affects the natural environment.

Pawlowski (2011:01) traces the history of EE from the people living in primitive times, who took care of plants and animals that they found to be of benefit to them. These people also sanctified certain places that they regarded as being sacred due to their religious beliefs. That can be regarded as part of the initial EE process in an informal perspective. The other ancient traces of EE are described by Irwin and Lotz-Sisitka (2005:37). These authors state that there is sufficient evidence to suggest that EE originated in the ancient civilisations of Egypt, Greece, India and China. They found that in Egypt, Ikhnaton, an Egyptian pharaoh sent scribes to educate farmers about where crops should be planted. Also in China, approximately 3000 years ago, there were public education programmes formulated to encourage reforestation and sustainable development for economic purposes. In the 4<sup>th</sup> century BC, in Greece, a student of Aristotle known as Theophrastus, argued for a form of integrated environmental management and better resource utilisation. Today he is regarded as the pioneer of basic ecological principles.

Irwin and Lotz-Sisitka (2005:38) believe that the historical understanding of present-day EE has its roots in the 19<sup>th</sup> century when the Industrial Revolution caused many people to become alienated from nature. The Industrial Revolution also caused a disruption in the cultural milieu of western civilisation. It caused a wasteful demand for the mass production of consumable goods through the rapid and systematic exploitation of natural resources. The Industrial Revolution also began to rapidly spread from Europe to the United States as well as to parts of Asia. Environmental concerns and protection programmes were largely established as a response to the social ills and the environmental degradation that emerged post Industrial Revolution.

During the period of the Industrial Revolution, two major world wars were fought in Europe, Africa and Asia. After the Second World War, the first environmental organisations were formed. Among these was the International Union for the Conservation of Nature and Natural Resources (IUCN) that was established in 1948. This organisation was primarily concerned with the diminishing natural resources and wildlife. Another notable organisation established in 1961 was the World Wildlife Fund (WWF). Its main purpose was to raise and secure funds for wildlife conservation (Irwin & Lotz-Sisitka, 2005:39). These organisations began to interact with many governmental institutions and non-governmental organisations (NGO's) regarding environmental issues. The most beneficial partnership, with regards to EE, was the one created with United Nations Educational, Scientific and Cultural Organisation (UNESCO) established in 1946. Initially, UNESCO was primarily concerned with educational issues in the development context. However, with its constant interaction with IUCN, it gradually became part of the development of EE. In Stockholm in 1972, a significant development in EE on a global scale took place with the United Nations Conference on Human Environment. This conference was historically the very first time whereby the world's rich and poor nations met to discuss environmental concerns.

Knoll (1997:18) states that in 1977 the 'Intergovernmental Conference on EE' took place in Tbilisi. At that conference, the dangers to the environment and the exploitation of natural resources were illustrated. This conference also demanded the change of attitude which seemed to make a general change and the solutions of environmental problems possible. Ethics in EE were also discussed at Tbilisi. Mohamed (2012:130) noted that at one of the earliest international meetings on EE in Tbilisi in 1977, the importance of ethical concerns was noted:

EE should prepare the individual for life through an understanding of the major problems of the contemporary world and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values.

Mohamed (2012:131) further clarifies that in subsequent years after Tbilisi, EE researchers and practitioners began to acknowledge that the development of environmental ethics was a critical component of EE. In addition, research has indicated that the presence of sufficient knowledge is not always enough to ensure that learners act in a pro-environmental way and that more attention needs to be given to environmental values education. Although the aspect of values and ethics in education is somewhat sensitive in nature, there is a growing demand and trend for people to search deeply for solutions to the current global environmental crises.

Irwin and Lotz-Sisitka (2005:41) state that a major breakthrough in EE was the Tbilisi Conference that was held in 1977. EE should, according to the Tbilisi principles formulated at this conference, consider the environment in totality. It was decided that EE should also be a continuous, life-long process and be interdisciplinary in its approach. Environmental issues should be examined from firstly a local and then an international perspective. EE should also help learners to understand the real causes of environmental problems by utilising diverse learning environments and approaches to learning from and about the environment.

Ten years after the Tbilisi Conference, the International Conference on Environmental Education was held in Moscow (Irwin & Lotz-Sisitka, 2005:40). This conference was also significant as it was the very first time that a clear definition of EE was developed. EE was defined as being a process wherein individuals and the community receive an awareness of their environment and thereby acquire the necessary knowledge, skills, experiences as well as the willpower to act, both individually and collectively, to solve the present and future environmental issues (See section 2.2 above). As stated earlier in this chapter, in 1990, UNESCO held the 'World Conference on Education for All' in Jomtein. EE had by this time, as stated by Knoll (1997:18), already become part of most basic education programmes.

According to Adams (2009:86), the Brundtland Commission was established by the United Nations General Assembly (UNGA) in 1983. In 1987, Brundtland, the chair of the commission, presented a report known as '*Our Common Future*' to UNGA. The last decade of the 20<sup>th</sup> century and the start of the 21<sup>st</sup> century saw the United Nations

organise two major environmental conferences. The first was the United Nations Conference on Environment and Development (UNCED), also referred to as the 'Rio Earth Conference', which was held in June 1992. The importance of this conference was already analysed earlier in this chapter. Ten (10) years after the Rio Earth Conference, another conference known as the World Summit on Sustainable Development (WSSD) was held in Johannesburg in 2002. Both these conferences were the result of the Brundtland Commission. In the next section, the discussion is focused to the history of EE in the South African context where this study was conducted.

## **2.4 HISTORY OF ENVIRONMENTAL EDUCATION IN AFRICA AND SOUTH AFRICA**

Understanding the historical background of EE in its local context is important as it allows a researcher to reflect on the reasons for certain issues being present in that context. In tracing the history of EE in the African context, Irwin and Lotz-Sisitka (2005:38) argue that prior to the European colonisation of Africa, decisions regarding the utilisation and conservation of natural resources would most probably have been made in consideration of the traditional social structures present at those times.

Traditional indigenous education and knowledge in Africa involved a detailed understanding of the local biological resources. This form of education also assisted people to develop skills to adapt to, manipulate and use the land, flora and fauna. Conservation often formed part of the shared beliefs, cultural taboos, folklore and myth associated with EE. These concepts created a mutual interest within communities to protect and not over exploit their natural resources. The discussion below analyses the manner in which EE became part of education policy as well as part of curriculum development in South Africa.

According to De Lange (2004:02) and Irwin and Lotz-Sisitka (2005:52), as a response to the environmental crisis, EE in South Africa dates back to more than 20 (or 30) years. Prior to the 1980s, the dissemination of EE in South Africa occurred in a very isolated manner as EE was not considered to be part of the South African school curriculum (Mosidi & Tselane, 1998:05). Similarly, Irwin (1990:05) suggests that the EE movement

in South Africa was primarily pioneered by non-governmental conservation agencies and state conservation agencies. Although this interest in EE started as early as the 1960s, the formal school curriculum in South Africa had been bereft of EE up until 1989 (Irwin, 1990:05). O' Donoghue (1996:210) agrees that EE in the South African context was initially influenced by various conservation movements. During the 1940s, awareness began to take root with the notion of introducing of conservation into the formal curriculum. However, it was only in 1953 that a formal syllabus on conservation had been developed. Prior to this, there had been some weak attempts to create an interest in soil erosion. In the late 1950s, many schools began to focus on introducing 'wilderness trails' into the co-curricular activities.

During the 1980s, Christian National Education (CNE) dominated the education discourse in South Africa. According to O' Donoghue (1996:210), CNE was influential in the development of 'Earth-love education' within the conservation education syllabus. It aimed to imbibe a form of spiritualism within the learners.

According to Le Grange (2002:84), the first attempt to include EE in the formal curriculum in South Africa, was the 1989 White Paper on Environmental Education. Therein, the EE principles of the Belgrade and the Tbilisi conferences, as stated earlier, were included in the formal curriculum. Although EE principles were included into the White Paper of 1989, the Act was never enacted in Parliament. As a result, there was very little implementation of EE at school level. Le Grange (2002:84) noted that only some of the Tbilisi principles were selected to form part of this White Paper of 1989, and those selected were not very 'broadly inclusive'.

Mosidi and Tselane (1998:05) regard the inclusion of EE as part of the South African national school curriculum to be a clear victory for EE community initiated in the 1980s. *The White Paper on Education and Training* (Department of Education, 1995) clearly states that EE should be an important feature of all levels and programmes of the education and training system. Schreuder (2002:110) believes that when analysing EE in the South African context, there are two main features that should be taken into account. Firstly, EE in South Africa is intrinsically critical in nature. However, Schreuder (2002:110) does not clarify this statement of his. In my opinion, Schreuder is probably

referring to the fact that the EE curriculum was initiated during the colonial apartheid discourse. Secondly, EE in South Africa, notwithstanding its political past, is yet 'well established and functional' as far as it's networking processes are concerned. To illustrate this feature, Schreuder (2002:110) cites the example of the Share-net project, which was designed during the 1980s so as to assist teachers with EE resources during fieldwork investigations.

These two characteristics, as described by Schreuder (2002:110), existed despite the fact that many previously disadvantaged individual South Africans began losing confidence in the various "ideologies" that influenced society during the apartheid era. These include those ideologies that arose from the government, religious and educational institutions. As a result, many people began to develop "alternative theories and patterns of thinking".

South Africa's first democratic election in 1994 necessitated imperatives for change and redress. In the period immediately following the elections, a remarkable amount of new policies on education reconstruction and reform as well as policies related to the physical environment began to emerge. The newly developed South African Constitution guaranteed the right of every citizen to a healthy environment that is not detrimental to his or her well-being. The Constitution along with supportive policy documents lays much emphasis on the prudent use of South African natural resources and the need for sustainable development (Department of Education, 1995).

In 1982, the Environmental Education Association of Southern Africa (EEASA) was established among a group of environmentalists and environmental educators, many of whom were from South Africa. Furthermore, De Lange (2004:05) explains that EEASA was a key role player in trying to motivate for the inclusion of environmental considerations in the new curriculum being developed by the Department of Education (DoE) through the Environmental Education Policy Initiative (EEPI) and the Environmental Education Curriculum Initiative (EECI). The EEPI was implemented in the South African formal education sector in 1992. This initiative aimed to gather and develop EE policy options more inclusively. A major breakthrough of this initiative was the adoption of EE in White Paper on Education and Training in 1995. EE was hence

regarded as one of the major principles for South African education and training. The principle states:

Environmental education, involving an interdisciplinary, integrated and active approach to learning, must be a vital element of all levels and programmes of the education and training system in order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources (Department of Education, 1995).

As a result of the White Paper of 1995, there were many policy processes that had great impacts upon the scholastic reorganisation and the reconstruction of the then education and training system in South Africa. The establishment of a National Qualification Framework (NQF) and the replacement of the contents-based education with that of an outcomes-based education in the form of Curriculum 2005 (C2005) were among such policy processes. This new C2005 was highly learner-centred as opposed to the previously teacher-centred pedagogies of the past (De Lange, 2004:05). The EE community played a significant role during the transitory period, after the abolishment of the apartheid era, when significant changes took place within education in South Africa

De Lange (2004:61) further elucidates that by 1996 there was a significant move in education policy in South Africa. National education policy development was significantly replaced by curriculum development. As such, there was a growing demand and need for a curriculum initiative in EE. Thus, EECl was established in 1996. This second initiative was tasked with furthering the aims of EEPI by promoting its goals and formally contributing to curriculum development in South Africa.

Among the primary goals of C2005 were, inter-alia, the need for equity in education provision in South Africa. C2005 aimed to transform education policy in South Africa. Life-long learning was the essence of C2005. This new curriculum was designed to be contextually appropriate and also followed the key tenets of the system of Outcomes-based Education (OBE). Both Schreuder (2002:109) and De Lange (2004) posit that that the EE community played an important role during this transitory period. The very same role players who contributed to the formation and implementation of EEPI were now instrumental in the creation of the EECl. Education policy-making processes were



thus largely influenced by those individuals, from the EE community, who were involved in EECl. These individuals worked closely with the various education departments and agencies and were deeply involved in curriculum development that was chiefly outcomes-based in nature.

According to Maila (2003:05), on the 5<sup>th</sup> of June 2000 (which also significantly marks World Environmental Day), the Ministry of Education officially initiated the National Environmental Education Programme (NEEP). This marked the commitment of the Department of Education towards the development of EE in South Africa (NEEP-GET 2001: 01). This programme reiterated and consolidated the government's support of EE in education reform and reconstruction. According to Maila (2003:05), the initial phase of this programme involved research which resulted in the '*Learning for Sustainability*' process. There were many wide consultations that were held prior to this process. The next phase was a professional development phase. Many key stakeholders were strategically involved in this phase. Thus, the overall goal of this process resulted in the development of "practitioner skills within an environmental frame work" (Schreuder, 2002:109).

According to Maila (2003:08), in South Africa, environmental learning in formal education occurred in one of two ways. Environmental learning occurred in an integrated approach. In this approach, the environment was considered as a phase organiser and environmental concerns were integrated across various learning areas. Environmental learning also occurred as an integral component in the National Curriculum Statement (NCS), a term that was used interchangeably with the Revised National Curriculum Statement (RNCS). In this approach, environmental issues were taught as serious concerns in all learning areas.

According to Dube (2012:11), the OBE curriculum failed due to policy tensions which led to widespread criticism. These criticisms focused chiefly on the origins and conceptual basis of OBE. Other forms of criticism included the policy nature of OBE, its knowledge and pedagogical features and process. The management of its formulation, adoption and implementation were also analysed and criticised by many scholars. For

example, Chetty (2015:02) posits that the pitfalls of OBE were inherited from certain educational factors that were still present during the apartheid system such as the presence of large classroom sizes, the lack of libraries and the lack of parental support. Chetty (*ibid*) cites Spady (2008:10-11), who is regarded as the “chief architect” of the OBE system, who also felt that, due to a lack of a conceptual understanding about OBE, it had a very minimal influence on educational reform in South Africa.

Reddy (2011:20) maintains that OBE was also incompatible to EE. The pre-determined outcomes of OBE, according to Reddy (2011), were contrary to the holistic approach to learning as enshrined in EE. OBE also had design issues and challenges related to its position in the context of South African schooling. The curriculum review committee identified many problems within OBE relating to its implementation. The committee thus recommended a more streamlined curriculum as well as more improved strategies of implementation.

However, the failure of OBE as suggested by Dube (2012) did not put an end to EE initiatives. The Revised National Curriculum Statement (RNCS) was launched in 2002. Despite the shortcomings and implementation problems of C2005, its advent after 1994 provided an opportunity and space for infusing environmental concerns. EE could be implemented holistically because of the integrated approach to education, especially at primary and lower secondary school level – the GET band. Thus, the incorporation of environmental concerns into the learning areas and subjects in formal education in the South African context was one of the most important innovations in the new curriculum.

Björklund (2015:01) states that the Ministry of Education in South Africa realised the need for education reform in 2012. The RNCS at the time was regarded as a curriculum that was very inaccessible to educators. Furthermore, according to Björklund (2015:04), RNCS received criticism as being impractical for schools that were under-resourced. Also, teacher perceptions of the RNCS were not investigated prior to the implementation of the curriculum. The national curriculum policy reform was developed with the introduction of the Curriculum Assessment Policy Statement or CAPS document in 2012.

Motshekga, the current Minister of the Department Basic Education, in the preface to the *NCS- CAPS Natural Sciences* document (Department of Basic Education, 2011), explains that after the introduction of OBE in 1997, a curriculum review was prompted in 2000 which led to the RNCS and the NCS. Furthermore, on-going implementation challenges, like those mentioned by Björklund (2015) above, led to the revision of the RNCS and NCS to produce the CAPS document. In this regard, Motshekga states:

From 2012 the two national Curriculum statements, for Grades R-9 and Grades 10-12 respectively, are combined in a single document and will simply be known as the National Curriculum Statement Grades R-12. The National Curriculum Statement for Grades R-12 builds on the previous curriculum but also updates it and aims to provide clearer specification of what is to be taught and learnt on a term-by-term basis. The National Curriculum Statement Grades R-12 represents a policy statement for learning and teaching in South African schools and comprises of the Curriculum and Assessment Policy Statements [CAPS] for all approved subjects” (Department of Basic Education, *NCS-CAPS Natural Sciences*, 2011).

The National Curriculum Statement Grades R-12 as contained in the CAPS policy document promotes aims that are divided into two categories, namely; general aims for cross-curricular implementation and aims that are specific to each subject. According to the general aims of *NCS-CAPS: Natural Sciences* (2011:04), the national curriculum, strive to infuse the principles of human rights, inclusivity and environmental and social justice within learners. The curriculum also aims to produce learners that are able to employ science and technology effectively and critically showing responsibility to the environment and health of others. Therefore, scientific knowledge should be utilised responsibly by learners, in the best interests of society and the environment. Therefore, it may be concluded that the CAPS policy document has some of the principles of EE implementation enshrined within its general aims. Therefore, environmental content is to be found in all approved CAPS subjects (Fundisa for change, 2013:02).

O’Donoghue (2013:01) maintains that the commitment to environmental content is still strong in a number of subjects within the CAPS curriculum. Furthermore, there are also

specific aims enshrined within each subject. In some subjects, these specific aims address EE concerns directly. For example, in Life Sciences, one of the specific aims is to make learners understand that the subject is relevant to their lives outside their school environments and may be utilised to enrich their lives. Therefore, Life Sciences should be acquired and taught in an integrated manner. Furthermore, learners should be introduced to careers related to EE such as game management, environmental impact studies and environmental law by teachers teaching Life Sciences (Department of Basic Education, NCS-CAPS: Life Sciences, 2011:17-18).

It can be argued that for the successful implementation of EE, it is also important that learners critically generate an awareness of EE issues that are related to the world in which they live. In this regard, Chetty (2015:01) argues that there are inferences within CAPS that are contrary to the democratic principles of post-apartheid South Africa. Such principles were purposefully enacted in the educational policy statements that appeared after 1994 (such as C2005 and RNCS). For example, it was clearly stated in these policy statements that pedagogy will be learner-centred and not teacher-centred and that there will be an “active and critical approach to learning” rather than mere rote learning. Chetty (2015) warns that although CAPS espouses liberalist principles such as social transformation and equal opportunities for all sectors of the South African population in education, yet in its implementation there is a fear that a gradual retrogression to the pre-1994 style will occur. According to Chetty (2015:01), instead of negotiating meaning and actively participating in the learning process, the learner merely becomes the recipient of a body of pre-determined knowledge in the implementation of CAPS. Chetty (2015:07) concludes that learners might not be able to form connections between their world and text when they lack critical analysis skills. This lack may also result in learners not being able to generate ideas for social change in aspects that affect their lives such as finding solutions to global environmental issues. Ontong and Le Grange (2014:35) also maintain that CAPS, in prescribing the same content for all learners across the country, disconnects learners from local places and hence erodes South African values of Ubuntu.

On the other hand, Mohamed (2012:16) regards education as one of the most critical resources in the formulation of an ecological ethic. Her view is that continual curriculum development will improve the quality of education provided at our schools. Consequently, this development will also ensure that there is quality EE offered at South African schools as well as ensure that our learners become more environmentally responsible. This will also create the awareness among the learners that a sustainable way of living depends largely on their assertive utilisation of the resources provided by the natural environment. (Deenanath, 2009:04). Curriculum development in EE will also create an aesthetic appreciation within learners for the natural environment. I now focus the discussion on the various dimensions of the term 'environment' when implementing EE.

While the discussion above indicated the relation between education and the environment in the conceptualisation of EE, there are also perspectives that the environment itself is a multidimensional phenomenon. If the multidimensionality of the environment is not realised, there is a risk that EE offered at different contexts may be incomplete. The next section is dedicated to the discussion of the various dimensions of the environment and their relation to EE.

## **2.5 DIMENSIONS OF THE ENVIRONMENT IN ENVIRONMENTAL EDUCATION**

Most scholars of EE regard the environment as comprising the bio-physical (ecological), the socio-economic, and the political dimensions (Reddy, 2011:12). Loubser (2005:118) regards these dimensions as sustainability indicators of any community. Ehnert and Harry (2012:223) also posit that society needs to look at how the goals of the different environmental dimensions can be achieved. In this regard EE should engage in the physical, biological, socio-economic, spiritual dimensions related to human development and the natural environment in order for it to be effective (Carvello, 2009:29). These dimensions should be found in all the disciplines of the curriculum. Effective means of communication as well as all forms of formal and non-formal media should also be adopted when disseminating and implementing EE.

As discussed earlier, O' Donoghue (1995:16) suggests a more encompassing definition of "environment" when he describes it as social, political and biophysical realities that act on natural conditions. Knoll (1997:18) adds that environmental issues deals with all the ethical, political and moral aspects related to it. He argues that although the human environment is naturally based and made up of biological features, the ethical, socio-economic and cultural dimensions of this environment also have a significant role. These dimensions will in effect assist people to understand how to use natural resources more wisely when satisfying their needs.

Pawlowski (2011:77) describes EE as activities that support a balance between social welfare, economical welfare and the cultural preservation of the earth's natural resources. He adds that when speaking about the strategies that have been adopted with regard to sustainable development, three pillars are usually mentioned. These are the ecological pillar, the economic pillar and the social pillar. Humans are social beings and factors such as customs, culture, spirituality, interpersonal relationships, demographic and economic conditions all contribute to our environment (Pawlowski, 2011:85).

In the ecological dimension of the natural environment, the systems and processes of nature are respected and protected. There is also an emphasis laid on the usage of renewable energy sources and the protection of food and clean water resources. Technologies are employed for the common good of all the stakeholders of the natural environment. (Loubser, 2005:118). As explained earlier by Pawlowski (2011:02), in the bio-physical dimension of the environment, the environment is seen as being crucial to human existence and thus needs to be protected. Added to this is the economic dimension wherein any damage to the environment is regarded as a definite financial loss and hence must be avoided.

Mohamed (2012:17) argues that the dimension of human spirituality plays an important role in creating and developing an environmental consciousness within people. This argument stems from the opinion that to affect a lasting change on the human-environment relationship, society needs to reach the place of beliefs, ethics and convictions of communities.

Commenting on the political dimension of EE, Hopkins and McKeown (2002:14) explain that the “education community” had no direct influence in the creation of the ESD curriculum. ESD was given impetus largely by outside international and economic agencies such as the UN. This style of “top-down” implementation of the ESD curriculum has also been observed in many countries. In such countries, government agencies such as the various health ministries have, in the past, developed the content of the ESD curriculum without consulting the main stakeholders of education. These curricula had then to be delivered by the educators employed in the state schools.

However, Mohamed (2012:21) argues that the politicisation of environmental issues, that gained an impetus during the late 1970s, led to the emergence of Green political parties in Western Europe, Britain and America. Throughout this time, stark differences between First and Third World environmental concerns and actions emerged. Environmental issues in the Third World were often posing much deeper political challenges than mere policy and institutional reform as they were focused more on issues of democracy, poverty, unemployment, hunger, and indebtedness.

Escobar (1998:75) regards biodiversity as construct or discourse that acts as an important agent between nature and culture. This construct has been the origin of a very wide network of settings and role players. This network has also acted as the contestation and negotiating site for concepts, policies, cultures and ecologies. The strategies adopted by many global social movements display trends associated with this discourse, which is described as a collection of discussions based on economic, technological as well as managerial processes. These processes were instituted to realise and to promote the benefits of biodiversity.

Also, Escobar (1998:53) explains that this construct has been recognised both in local and international contexts. Ethnic and cultural identities have thus been redefined by local social movements and NGOs in many countries as a result of this discourse. Accompanied to this discourse are the political strategies of its role players, which make up a significant means of intervention in this diverse culture field.

Pawlowski (2011:145) also explains that most strategies of modern sustainable development largely depend on the political will and legal system of a nation. Loubser (2005:160) suggests that non-formal organisations should play the role of strengthening the macro goals of governments with regards to EE. This should take place in the form of grass-root action. I now look at how EE has been successfully implemented in some South African institutes.

## **2.6 ENVIRONMENTAL EDUCATION IN SOME SOUTH AFRICAN INSTITUTES**

There has always been a concern that EE in South Africa should not only be the responsibility of the schooling and other formal education sectors. The industrial sector, corporate sector and non-governmental organisations (NGOs) have been eyed to contribute in EE practices (Loubser, 2005:160). Some of the non-formal education sectors have been responding positively in attending to issues related to EE. According to Lotz-Sisitka (2005:162), environmental management practices in the context South African of industry are influenced largely by education and training policies.

Many South African corporate companies have been implementing the ISO 14001 Environmental Management System Standard that promotes environmentally-oriented standards on how business should be carried out in South Africa. The outcome of this standard was the need for the appropriate training programmes for environmental management and sustainable development. EE thus played a significant role in the development of these training programmes (Lotz-Sisitka, 2005:165).

Loubser (2005:159) suggests that in the non-formal education sector, EE centres also have played a significant role in the South African context. For example, Loubser (*ibid*:160) mentions institutes such as the Delta Environmental Centre in Johannesburg which have continuously promoted EE by providing EE courses related to curriculum content to be used in South African schools. This institute also designed EE courses for business, industry and the general South African public. Other NGOs who also have also successfully implemented EE in their various projects that they have undertaken include the South African Environmental Education Association; Keep Durban Beautiful;



Earthlife Africa; Environmental Justice Network Forum and Umgeni Water (Loubser *ibid*:159).

## **2.7 SUMMARY**

In this chapter, I analysed the various definitions of EE as well as those related to ESD. I also discussed the history of EE both in the global and South Africa contexts. The discussion was focused on the various dimensions of the environment as suggested by Reddy (2011:12) and O' Donoghue (1995:16). These dimensions included, inter-alia, the bio-physical, socio-economic and political environment in relation to EE. Finally I analysed EE practices taking place in some institutes in South Africa. In the next chapter, I present a theoretical framework for this study.

## **CHAPTER 3: THEORETICAL FRAMEWORK**

### **3.1 INTRODUCTION**

In Chapter 2, a review of literature provided definitions and conceptual understandings of EE and ESD. I also discussed the history of EE both in the global and local contexts. The discussion elicited the multidimensionality of the environment and the need for EE to encompass the bio-physical, socio-economic and political dimensions. The aim of this chapter is to present theories that framed the process of this study. Creswell (2009) believes that the presentation of a theoretical framework of any study establishes the importance of the study.

This chapter is composed of four sections. Firstly, the concept of the terms “environment” and EE as found in the discourse of Islam are discussed. The discourse that is followed in Muslim schools is that of Islam. The intention of this first section of the chapter is thus to bring to the fore the features of the Islamic discourse and to illustrate how such a discourse relates to EE implementation in Muslim schools.

The second aspect of the chapter is the analysis of the way in which knowledge is conceptualised in Islam. Islam has unique ways of conceptualizing knowledge which are not necessarily similar to those of other religions. This conceptualisation is important to understand if the implementation of EE in Muslim schools is to succeed.

Thirdly, the concept of eco-theology, the eco-theological movement and the need for an Islamic ethic in the implementation of EE in Muslim schools is examined. This examination was done because in this study the implementation of EE within various Muslim school settings was investigated. In such settings, religious ethos, especially those related to Islam, play an integral role in such implementation, hence the need for a discussion on eco-theology. The eco-theological movement is the primary driving force of eco-theology hence a brief analysis of this movement is given. Also, for the implementation of EE to be successful, Muslim schools ought to have a strong

environmental ethic. Lastly, the various factors that constrain and enable EE implementation in schools, as found in literature, are analysed.

### **3.2 THE ENVIRONMENT AND ENVIRONMENTAL EDUCATION IN THE DISCOURSE OF ISLAM**

As discussed in Chapter 2, EE in the 21<sup>st</sup> century calls out for a complete redefinition of its concepts. It is in this regard that Deenanath (2009:02) believes that since environmental issues are complex and multifaceted, EE programmes that only transfer information about environmental issues will be futile. To demonstrate her argument, Deenanath (2009) quotes Janse van Rensburg and Lotz (1998) who define EE as a continuous process of “equipping people with knowledge, skills, attitudes and commitment (action competencies) to address socio-ecological issues.”

According to Stevenson (2007:146), the guiding principles of EE contained in the Tbilisi Declaration of 1978 establish certain curricular and pedagogical practices as a necessity to achieve EE goals. The primary focus is for learners to work independently and cooperatively aiming to resolve environmental issues. So EE, according to this view, it would incorporate learning and teaching as active and inquisitive processes into real-life environmental issues. Learners should not only develop knowledge, skills and positive values towards the environment but also be encouraged to take action in trying to solve these issues. Stevenson’s view suggests that educators are largely responsible for making a concerted effort to imbibe these important skills and values within their learners. This view is also true for teachers teaching at Muslim schools.

EE in the Islamic discourse, as well as in that of the Islamic education system, plays an important role in the empowerment of people (and young people in particular) to develop positive attitudes toward the environment. Shobeiri, *et al.* (2013:93) maintain that at the commencement of Islam, the issue of Islamic environmentalism was not identified as it is today. The Holy Qur’aan is the most important source of Islam (Mohamed, 2012:201) as filled with many Qur’aanic verses based on which

contemporary Islamic thinkers present their argumentations for the promulgation of Islamic environmentalism.

Shobeiri, *et al.* (2013:94) also feel that Islam as being a complete divine religion looks at the environment as a non-material entity. In Islam, the environment, nature and other creatures are considered to be a divine deposit of Allah (God) and protection of them is construed as an ethical responsibility. The preservation of the natural environment in Islam relates strongly to the observance of justice by present-day man for the forthcoming human generations. Islam does not seek to dominate nature (Shobeiri, *et al.*, 2013:94).

The earth is regarded as a trust given by Allah to humans. Therefore, Muslims consider humans as trustees or managers of affairs on earth. Humans are not regarded as the owners of earth (Loubser, 2005:98). This view is in agreement with that of Kerr (2000:61), who maintains that Islam consistently fosters a healthy relationship between belief and social justice for all. Accordingly, Islamic scholar activists continue to seek political reform and to counter injustice, both in former colonialist regimes as well as in the contemporary Muslim world.

Dreyer (2012:100) states that Islam teaches that the earth is subservient to humankind, but that human beings hold the earth in trust. In other words, the earth should be responsibly used by humans. The earth is a beautiful garden that should be cared for lovingly as preparation for the afterlife and this is what Islam advocates. Dreyer (2005:97) adds further that Muslims follow exhaustive regulations about what is expected of them concerning the utilisation of the environment. This includes the utilisation of water, soil, animals, plants and minerals. Humans, according to the Islamic faith, are part of nature and are therefore subjected to its laws as instituted by Allah.

Shobeiri, *et al.* (2013:93) maintain that the theism theory is the primary principle of Islamic ideology. Theism is a framework for Muslims' beliefs, and therefore theism influences the views and efforts of a Muslim. From the theistic viewpoint, everything is the sign of Allah and a witness to Allah's existence. Accordingly, the entire universe is the result of divine will of Allah and has as such been created for a divine purpose.

Furthermore, Shobeiri, *et al.* (2013:94) elucidate the relationship between humans and nature in Islamic ideology by stating that in Islamic ideology, the relation between human and nature should be similar to a just legislator and his citizens. Any abuse of power would shift man from a just leader to an opinionated tyrant. The result of tyranny is nothing but rebellion. Owing to its all-inclusive nature and its synthesis of all-inclusive revelation, Islam has many rules and regulations to meet the changing needs of man at any age.

Mangunjaya and McKay (2012:289) opine that in Islam a wider understanding of the environment is maintained as daily aspects of a person's life such as cleanliness and prayer are connected to the bio-physical environment. For example, Muslims use water, a naturally-occurring abiotic factor for ablution prior to prayer. The place of prayer also has to be purified before prayer. As such, Islam strongly advocates respect for all living things (Khan, 2009:33). Mamat and Mokhtar (2012:94) agree with the view of Khan (2009) that in Islam, there is more discussion regarding the attitude that human beings ought to display toward different types of ecosystems, whether such ecosystems are physical or metaphysical. Flora, fauna, mountains, clouds and oceans are all considered physical ecosystems. Metaphysical ecosystems include elements such as heaven, hell and the world of angels.

According to Mamat and Mokhtar (2012:94), from the above discussion, there are four ecological dimensions that are constructed according to universal Islamic teachings. These are: ethical living towards flora and fauna, ethical living towards air and water, ethical living towards humans and ethical living towards metaphysical entities. Islam teaches human beings to respect all forms of plant and animal life (biotic factors) as well as non-living entities (abiotic factors) such as soil, water and air. Islam advocates the importance of preserving human life and also to respect sacred sites.

Khalid and O' Brien (1992:65) as quoted by Khan (2009:33) considers it forbidden in Islam to cause harm to the creatures of the environment or to the environment itself as this will cause harm to the community. Khan (2009:33) also cites Abu-Sway and Sachedina (1991:10), both of whom are of the opinion that the environment in Islam is perceived as a "plane" wherein the signs of the power and majesty of Allah are made

manifest. Therefore, when humans destroy any section of the environment, they are inadvertently obliterating a part of something that 'reflects the greatness of Allah'.

Mangunjaya and McKay (2012:289) believe that environmental teaching is inherent to Islam. In addition, Mangunjaya and McKay (*ibid*) have cited seven Islamic scholars who hold the same view that environmental awareness and care is a component of Islamic teachings. The creation of the diverse biomes, as well as the different spheres such as the atmosphere, the hydrosphere and the lithospheres, is regarded as the means that Allah employed for the habitation of man (Khan, 2009:32). These abiotic and biotic factors were all placed by the Almighty Allah at the service of man (Qur'aan, 31:20).

Scientific studies indicate that the atmospheric gases are mainly made up of nitrogen and oxygen. A small percentage of other gases such as hydrogen, argon, neon and krypton also occur as natural gaseous elements in the atmosphere (Gillespie, Eaton, Humphreys & Robinson, 1994:44). All these gases are found in a state of equilibrium and constitute the 'natural balance' created by Allah. Khan (2009:32) states that this 'natural balance' has been upset due to global technological advancements with an increased level of harmful gases entering the atmosphere. She believes that all Muslims have an ethical and moral responsibility to protect these naturally occurring spheres and their respective biomes from pollution and devastation.

The Qur'aan (21:30) alludes to the hydrosphere by stating: "We (Allah) have made every living thing from water". Thus in Islam, water is regarded as an essential component of daily religious rituals. Muslims need to perform a special type of ablution called 'Wudhu' prior to the five daily obligatory prayers called 'Salaah'. In addition to this, Muslims also use water to ritually purify themselves after some personal activities via a special bath called 'Ghusl'. The following verse, regarding these ritual activities appears in the Qur'aan (05:07):

O you who believe! When you prepare for prayer, wash your faces and your hands [and arms] to the elbows; rub your heads [with water]; and [wash] your feet to the ankles. If you are in a state of ceremonial impurity, bathe your whole body. But if you are ill, or on a journey, or you come from offices of nature, or you

have been in contact with women, and you find no water, then take for yourself clean sand and earth, and rub therewith your faces and hands. Allah does not wish to place you in difficulty but to make you clean.

The traditional Muslim scholars of jurisprudence (known as the 'Fuqaha' in Islamic terminology) have compiled many scholarly works regarding the special laws that pertain to the usage and types of water and its sources found within the hydrosphere. Cleanliness in the forms of personal hygiene and environmental health are important aspects in the life of a Muslim. Therefore, Muslims are mandated to care for water and Islam strictly prohibits the misuse and the pollution of water. This includes the pollution of rivers, streams, wells and the oceans, which causes water to gradually become "unfit for human consumption" (Khan 2009:32). Islam especially frowns upon the wastage of the natural resources found within the biosphere. The Qur'aan (07:31) states in this regard:

O children of Adam, eat and drink [consume from the natural resources] but do not waste. Verily Allah does not love the wasteful folk.

Also Al-Kazwini (2000:2502) reports that the Prophet Muhammad (peace be upon him) said:

Do not waste water, even though you are performing ablution at the banks of a river. (*Sunan Ibn Majah*: hadith no. 425).

Muslims believe that the noble Prophet Muhammad (peace be upon him) was the final messenger of Allah. The Prophet Muhammed (PBUH) taught his companions (who are known as the Sahabah in Islamic terminology) the importance of environmental preservation. Therefore, he is considered to be one of the pioneers in environmentalism (Khalid 2002:01). Khan (2009:32) states that the Prophet Muhammad (PBUH) developed a unique code of ethics in environmental philosophy. These views were compiled in the renown scholarly collection of 'Ahaadith' (prophetic traditions) called '*Sahih Bukhari*' under the section called the 'Book of Agriculture'. For example, the Prophet Muhammad (PBUH) also advocated kindness to fellow human beings in the following statement:

Feed the hungry, visit the sick, and set free the captives (*Sahih Bukhari*, 1981: 7-375).

Islam encourages the cultivation of land as well as the planting and the preservation of flora. Both human and animal life depends on vegetation, and as such, most forests form the natural habitats of the most important vegetative resources (Khan, 2009:32). In this regard, the Prophet Muhammad (PBUH) has stated:

There is none amongst the Muslims who plants a tree or sows seeds, and thereafter if perhaps a bird, or a person or an animal happens to eat therefrom, except that it will be considered as a form of charity from the one who has planted the tree (*Sahih Bukhari* 1981: 3-295).

Islam also advocates the humane treatment of all animals (Khan, 2009). Utmost care and consideration is undertaken when slaughtering those animals that are permissible for human consumption. Said the Prophet Muhammad (PBUH) in this regard:

Indeed the Almighty Allah has inscribed kindness on everything. When one of you intends to slaughter, let him make the slaughter [quick and] good. When you sacrifice, make the sacrifice good. So, sharpen your knife and give ease to the sacrificial animals (*Mishkat-ul-Masabih*, 1939:2-169).

According to the noble Qur'aan, Allah has created man as His vicegerent on earth. In this regard, Qur'aan (2:30) mentions:

And remember [O Prophet Muhammed] when your Lord said unto the Angels: "I am going to create a vicegerent [of mine] on Earth," they [the Angels] replied: "O Lord, will thou create one who will cause mischief and spread bloodshed upon earth?"

Man is expected to protect and preserve the natural habitations upon earth. (Khan, 2009:30). With regards to the importance of respect for the environment, the Qur'aan (22:32) states:



And that person who respects the signs of Allah, surely it [this respect] is due the consciousness of Allah that is embedded within his heart.

Furthermore, the Qur'aan clarifies that amongst the signs of Allah, is His creation of the heavens and the earth with its bio-diversity. In this regard, the Qur'aan (30:22) states:

And from amongst His [Allah's] signs are the creation of the heavens and the earth and the diverse nature of your languages and your colours [skin complexions]. Indeed, in these matters are manifest signs for the universe.

The interference in the balance of nature is mostly due to Man's actions. Man has repeatedly interfered with the natural laws of nature as well as with many environmental systems. Again, the Qur'aan (30:41) warns Man to be wary of such interferences which it terms as "mischief". The Qur'aan (30:41) states in this regard:

Mischief has appeared on land and sea because of the corruption that the hands of men have earned.

Khalid and O' Brien (1992:34) believes that human interferences have in the past contributed to many of the environmental challenges that we are experiencing presently. In addition, Khalid and O' Brien (*ibid*) views the system of the entire creation as a balanced one set into motion by the Almighty Allah. This balanced system found within the creation allows for all creatures to be interrelated. In addition, this system also fosters a unique relationship that every creature may enjoy sharing with its Creator, Allah. Ahmed (1997:192) opines that the misdeeds of Man will inevitably corrupt and pollute these unique interrelationships. Such misdeeds are usually carried out in the name of progress, development, revolutions or technological advancement. In this regard, Ahmed (1997:192) states:

We are answerable to our Lord, no less than we are to society, for damaging the necessary balance. Today, we are sitting on the brink of a major environmental disaster created by human actions.

Islam advocates the implementation of knowledge, skills and values for the benefit of society as a whole. Prophetic traditions (called Ahaadith) are filled with encouraging advices for Muslims to take active steps to care for the environment. Like the Masjid (Muslim place of worship), the school also plays a significant role in any Muslim community. It does not only serve as the hub of Muslim community activity, but is also viewed by most Muslims as the place wherein young Muslims are nurtured into responsible and productive members of the community as well as active citizens of the state. Ramadan (2009:155) stresses the importance of Muslims developing their own terms of reference and ethics. Muslims need to act as agents of renewal and reform to meet the challenges such as the ecological question. They need to resist and seek to change the “aberrations in society” (Mohamed, 2012:12).

Muslims governments are found in many regions in the world, especially in the Middle East, North Africa and in parts of Europe and Asia. Khalid (2002:07) believes that it might be viable for these Muslim governments to assimilate some form of Islamic environmental regulations into their current legislation. For example, Muslim governments may impose restrictions on resource usage and penalties for resource wastage as Islam frowns upon wastage. However, the biggest challenge would be for such Muslim governments to practically implement such laws.

Khalid (2002:07) further reports that mostly non-governmental organisations (NGO) in Muslim countries try to assist in implementing the “challenges of environmental change”. This is probably due to the wrong perceptions held by many Muslims that environmental challenges and environmental change is not a Muslim problem. However, recently, a form of a spiritual renaissance has caused many Muslims to rethink their role in trying to address environmental issues. Deen (1990:06 cited by Mohamed 2012) argues that at present the role of Islam in environmental protection can be seen in the formation of various Islamic institutions, with the emphasis given to Islam as the chief motive for the protection of the environment. In addition, Deen (*ibid*) further contends that it is not only necessary to involve and engage the Muslim public in environmental and conservation policies but also to improve the morals and to alter the attitudes of the Muslim people towards the environment.

According to Tuncer, Ertepinar, Tekkaya, and Sungur, (2005:226), EE surpasses the boundaries of mere protection of nature and the physical environment. Through the awareness of environmental issues, it has the capacity to also solve those issues related to the socio-cultural environment. Furthermore, Tuncer, *et al. (ibid)* observed that although EE in many countries continues to be in its “infancy”, there are many “systematic efforts” carried out in such countries to include EE concepts into their school curricula.

In conclusion, the religion of Islam emphasises the importance for humans to be aware about environmental concerns and to also practically care for everything related to the natural environment. For this awareness to be created, a solid knowledge-base on EE and Islamic concepts is required. As mentioned earlier, the conceptualisation of knowledge in Islam is a unique process. In the following section, I focus the discussion to the manner in which knowledge is conceptualised in the religion of Islam.

### **3.3 THE CONCEPTUALISATION OF KNOWLEDGE IN ISLAM**

Although, traditionally and historically the act of imparting and acquiring Islamic knowledge (called “Ilm”-in Arabic), begun from the era of the Prophet Muhammed (PBUH), its conceptualisation into the Western education system, only began to emerge in the late 1970s. According to Jenkins and Chapple (2011:456), among the very early literature published in the field of Islamic environmentalism was *Man and Nature* by Nasr in 1967.

Razak (2011:65) maintains that knowledge in Islam is regarded as value-laden. Hence such knowledge aims to link humans with their Creator. As such, knowledge in Islam is sought for the improvement and rectification of the human soul. Niehaus (2008:21) believes that the “Islamisation of knowledge”, which first emerged in the context of the First World Conference of Islamic Education in 1977 in Saudi Arabia, influenced the founders of Islamic schools both around the world as well as in South Africa. Furthermore, Niehaus (*ibid*) explains that Muslim intellectuals saw Islamic education in a deep crisis as schools and universities in Muslim countries were, in their view, heavily influenced by Western ideologies and secularised to such an extent that religion played hardly any role in these institutes. Textbooks and curricula adopted at such institutes

needed to be revised and adapted to make them more compatible with Islamic values and norms. The belief was that the Islamisation of knowledge in schools would contribute to the protection of the natural environment.

However, Tayob (2011:39) strongly disagrees with Niehaus (2008). Tayob (2011:39) feels that the common assumption regarding Islamic education, being traditional, yet crying out for modernisation and adjustment, requires further scrutiny. According to Tayob (2011), the assumption of Islamic education being only traditional in nature ignores the fact that Islamic education has been the site of a complex debate since the nineteenth century. The progress of Islamic education over the past few years is usually ignored by many western scholars.

While critically discussing Islamic pedagogy, Waghid (2011) advocates for a radical reinterpretation of traditional Islamic educational concepts such as 'Tarbiyah' (nurturing), 'Ta'lim' (instruction), Ta'dib (mannerism). The concept of Tarbiyah ought to go beyond basic nurturing to cultivating respect for the other as well as the other's viewpoints. Instruction that is unidirectional needs to move towards deliberative engagement and Ta'dib must cultivate acts of social activism and as such, move away from just doing good. In other words, EE teachers in Muslim schools can implement the concept of Tarbiyah by allowing the learners to understand the importance of environmental care. The EE teacher should, through the avenue of Tarbiyah, engage the learners with complex environmental issues and also try to formulate solutions to those environmental issues. Furthermore, the concept of "Ta'dib" may be used as a tool to assist learners to develop moral and just environmental ethics.

According to Ramadan (2009:280), an Islamic education should in addition to imparting knowledge, also awaken a learner's conscience. It should also shape their critical minds, lead them towards autonomy and awaken them to personal and collective responsibility. Therefore, the EE curriculum implemented in Muslim schools should, in its learning outcomes, also enable learners to become critical thinkers with regards to environmental issues. Learners attending Muslim schools should become more responsible individuals towards the physical environment on completion of the EE programme.

Shobeiri, *et al.* (2013:93) explain that Islamic teachings include a collection of value systems. These systems encompass the use of resources, the manner of relation between human and nature and most importantly the quality of the relation between humans and God. In Islamic belief, the relationship between individual and environment is controlled by some ethical regulations. These regulations arise from creation of man by God and the role being entrusted to him in the earth. The world including all things therein was created by God and human is substantial part of divine balanced creation. Yet, the role of man is not limited to enjoyment, use and profit from surrounding environment.

Historically, Booyse, Le Roux, Seroto and Wolhuter (2013:78) believe that religious institutions contributed to the provision of education in South Africa. Booyse, *et al.* (*ibid*) affirm that there is sufficient evidence of proselytization efforts that were carried out by the two monotheistic religions, namely; Christianity and Islam. According to Booyse, *et al.* (*ibid*), the Muslims were much more active in these efforts and by the end of 1806 had more converts to their belief system. The earliest Muslim settlers in South Africa were 'the only enslaved people who founded their own schools to ensure the perpetuation of their traditions and religion.' Instruction in religious matters amongst Muslims is considered as important as education itself (Booyse, *et al.* *ibid*: 82). Therefore Foltz (2006:101) posits that among the major universal religious traditions, Islam possesses perhaps the greatest sensitivity to the value of the natural resources and the need to preserve them.

Booyse, *et al.* (2013:210) describes the provision of education for Indian Community during the apartheid regime in the former Transvaal Province. They state that the establishment of the first two Indian schools in Pretoria emphasised the religious differences between the Hindu and Muslim communities. Hence both communities preferred a separate dispensation of education. Apparently, the two Indian school committees attached much importance to the religious orientation of the teachers employed therein. Therefore, a less competent but religiously devoted teacher would be appointed over an expert irreligious teacher (Booyse, *et al.* 2013:210).

Religious instruction in the Muslim community holds a very significant position. For EE to be successfully implemented in Muslim schools, it is important that the ethos followed in such schools be intrinsically Islamic. In the next section, the focus of the discussion is on the connection between religion and ecology, which refers to a subfield known as eco-theology. Other concepts that arise from the subfield of eco-theology such as ecological ethics and Islamic ecological ethics are also discussed.

### **3.4 ECO-THEOLOGY AND ISLAMIC ECOLOGICAL ETHICS IN MUSLIM SCHOOLS**

As explained earlier, the Muslim school context is unique in the sense that the curriculum followed in such schools strongly correlate with the Islamic theological discourse. Also discussed earlier, was that for a Muslim School to implement EE effectively, a solid ethic, especially with regard to the physical environment, ought to supplement such an EE implementation. Naturally, this ethic also should be intrinsically Islamic in nature. The discussion in this section is focused on the important role that religion plays in the development of environmental ethics within any community. The concepts of eco-theology and eco-ethics are also discussed in this section.

According to Munteanu (2010:333), eco-theology deals with an understanding of environment as God's creation; that is, as a grace of God and as a material presence of the creator. It is argued that eco-theology, as an emergent field in the contemporary era, is characteristically "multi-voiced and multi-faced" (Hrynkow, *et al.*, 2010:310; Kearns 2004:481). Mohamed (2012:01) believes that religion and ecology can form an alliance for major changes in 21st century environmentalism. According to Mohamed (2012:01):

"People of faith, who often stood at the forefront of the battles for human justice, are now reclaiming their roles as guardians of planet earth and advocates of her well-being. This mind-set is giving rise to a sub-field commonly known as eco-theology."

The concept of eco-theology implies a broad relationship that exists among religious beliefs, practices and the operations of nature. For example, Shobeiri, *et al.* (2013:92)

state that in all divine and great religions, cleanliness, purity and lack of pollution are considered part of religious duties. This belief began from the followers of the primitive religions who respected and revered nature. As a result, the followers of the great contemporary religions have continued to display the same behaviour towards nature in their special ways (Shobeiri, *et al.* 2013:91). The authors are also of the opinion that different elements and factors should be analysed to avoid environmental destruction. Among these factors, the religious factors are the most important of all.

Similarly, Jenkins and Chapple (2011:458) maintain that the relationship between religion and ecology is very interactive and diverse. Both concepts are also regarded as interdisciplinary and in different disciplines questions regarding the relationships between and meanings of religion, nature and ecology have emerged. To illustrate this relationship between religion and ecology, Michaud (2011:24) cites as an example, the document composed by Pope John Paul II, entitled "*The Ecological Crisis: A common responsibility*" wherein the respect for nature, ecological awareness and solidarity are encouraged. Religious traditions continue to be driven by change largely due to how people have responded to environmental issues. As a result, the interaction between religion and ecology continues to be significantly productive (Jenkins & Chapple, 2011:458).

Saadatian, Mat, Lim and Sopian (2012:118) posit that some historians believe even prior to religion, sustainable development was considered as part of community life. The 1960s saw the emergence of a relatively progressive movement in the field of ecology and environmentalism. Religion and religiosity formed the framework for many environmental ethics during the 1960s. Kearns (2004:466) states that the contemporary environmental movement, known as the Eco-theological movement, was initiated in the 1960s. This period also saw the emergence of many critical thinkers who began to question the hallmarks of the Eco-theological movement. He alludes to White's (1967) infamous article, "The historical roots of our ecological crisis", wherein White concludes that: "Christianity bears a huge burden of guilt for the ecological crisis" (Kearns, 2004:466). To substantiate this argument, White (1967) cites certain issues such as the occurrence of concepts found in the Bible that allude to the subjugation of nature by

human beings. For example, the phrase "the (human) dominion over all the earth", according to White, implies an anti-ecological, destructive view. This view also implicitly gives humans the divine right to exploit nature for their "proper ends" (Kearns, 2004:467).

Shobeiri, *et al.* (2013:93) tend to disagree with White (1967), who states that the historical roots of the present global environmental crises is due to the attitudes of the adherents of the Abrahamic religions (namely; Jews, Christians and Muslims). These adherents, according to White (1967), regard nature as being under Man's domination. This perception, according to Shobeiri, *et al.* (2013:93), is an incorrect view on the part of some western thinkers. In addition, White (1967) was of the opinion that the total outlook of religion towards nature is the main environmental crisis factor. Firstly, Shobeiri, *et al.* (2013:93) argue that religions have been accompanying man for many centuries prior to the pre-modern era. Secondly, Shobeiri, *et al.* (2013:93) maintain that White (1967) did not pay attention to the fact that most of the global environmental crises had only begun to occur during the modern civilization era.

Also in disagreement is Dreyer (2005:97), cited by Dreyer (2012), who advocates that peoples' faith, which in essence forms part of their total outlook on life and the world, can have a powerful influence on their attitude towards the environment and the way they treat it. Dreyer (2005:97) concludes by stating that all the great religions of the world have given their adherents specific and general guidelines on how to treat the environment and are therefore intrinsically enviro-friendly in their dogmas, teachings and methodologies. Unfortunately, not all their adherents act according to these divine prescriptions. As a result, it is the responsibility of the leaders of all religions to re-alert their adherents to the laws on environmental utilisation and conservation (Dreyer, 2005:97).

Jenkins and Chapple (2011:456) have also shown that there are strong commitments amongst the adherents of the Abrahamic religions (Christianity, Judaism and Islam) towards the protection and preservation of our physical environment. Therefore, they (*ibid*) advocate the necessity for dialogue and collaboration among these adherents of the Abrahamic religions in their search for shared solutions to the global environmental



challenges. Therefore, although White's theory is debatable to some extent, it has resulted in some attempts in intellectual, ethical, philosophical and knowledge approaches towards the environment, and it is of importance from this viewpoint.

Social movements as well as social protests directed inter-alia towards concerns regarding ecology, during the 1960s, also rendered much impetus to the eco-theological movement. According to McDaniel (2007:20), the eco-theology movement, although found wanting in formal structuration and authority, has nevertheless sprouted among various communities globally. Hrynkow, Byrne and Hendzel (2010:310) state that it is fair to regard those individuals that are involved in the eco-theological movement, who are trying to seek an authentic response to the ecological crisis, which, in itself may be considered as one of the key contextual problems of current time.

With regard to the eco-theological movement in the South African context, Mohamed (2012:232) maintains that there are many cultures, languages and religions existing in the diverse landscapes of South Africa. Therefore, the South African context is religiously pluralistic. There is also much inter-religious interaction that takes place in South Africa. Due to the fact that the majority of the South African population is Christian, the eco-theological movement in South Africa was initially dominated by Christian scholars and theologians (Mohammed, 2012:232).

Among the very early engagement of other non-Christian faith groups in ecological issues in South Africa, was the Faith and Earthkeeping Project set up by the University of South Africa (UNISA) in 1995 (Mohamed, 2012:232). This project promoted, inter alia, research in environmental philosophy, ethics and theology. Mohamed (2012:232) states:

In its [the Faith and Earthkeeping Project] seven-year run, it made a notable impact in linking religion and ecology and in laying the foundation for the emergence of an interfaith network, SAFCEI, [the South African Faith Communities Environment Institute], which gathers faith communities around inter-religious dialogue and action on the environment.

The South African Faith Communities Environment Institute (SAFCEI), together with Indalo Yethu, a national environmental awareness campaign, convened an environmental summit known as *Religious Leaders for a Sustainable Future* in 2009. The summit emphasised the important role that religion assumes in the formulation of environmental ethics. This summit culminated with a declaration which, inter alia, states:

Faith-based communities have a significant role to play in the nurturing and protection of God's creation. All religious leaders have to place environmental justice at the forefront of their agenda, to promote an ethically-based economic system and to take steps to safeguard the future of our children and planet earth (Indalo Yethu & SAFCEI, 2009:23).

White (1967:1203) as cited by Nagle (2012:44) opines that the interactions that people have with the environment is largely dependent on how people perceive themselves in relation to nature. Mohamed (2012:02) believes that people shape their values mostly according to their conception of the universe in which that they live. Religion provides a rich framework for many metaphysical questions that relate to humanity, nature and the Creator. It also continues to provide a rich metaphysical basis for developing an ecological ethic in the 21<sup>st</sup> century (Mohamed, 2012:01). De Hanas (2010:142) suggests that in order to understand the human relationship with the natural environment, it is necessary to explore the notions that are presented in a religious system.

Latour (2009:464) posits that religion demands radical transformation. Therefore, religion could become a powerful alternative for ecological efforts, especially if a stronger connection can be re-established between religion and the creation. In this regard, Latour (2009:463) states:

Religion presents itself as a rather plausible alternative to an ecological consciousness whose ethical and emotional drives do not seem to have enough petrol (or soybeans) to carry us through the tasks it has burdened upon us.

Similarly, Jenkins and Chapple (2011:456) state that there are multiple, solid and productive links between religious and environmental studies. This provides some sort of solace for the future of environmental sustainability. Human behaviour is a complex

phenomenon and as such, a deep understanding of the spiritual dimension of this phenomenon has become very important.

Effiong (2011:03) maintains that most religions, religious traditions and cultures place value on the natural environment. The environment is perceived as the creation of God. Furthermore, the creation of God is seen as a gift from God. Religious education can play a role in educating people about the value of the environment. It may be able to also encourage sustainable development by focusing, among other things, on the benefits of lifestyle changes for the well-being and sustainability of the environment.

Mohamed (2012:28) tends to agree with Effiong (2011) when she states that the ecological ethic of most religions pivots around the love and obedience to the Creator as well as the respect for His creation. As stated in Chapter 2, Mohamed (2012:16) regards education as the one of the most critical resources in the formulation of an ecological ethic. Therefore, people of faith have an important role to assume in the development of this ecological ethic. It may be argued that this role should permeate into every individual living in South Africa. Muslims living in South Africa ought to thereby proactively and positively contribute to the solutions that their religion, Islam, can offer to the socio-environmental dialogue both locally and internationally. However, Effiong (2011:10) believes that different religious communities, and not only Christianity, can reposition themselves to become a principal resource for addressing the current environmental crisis. In addition, Effiong (*ibid*:11) argues that religious education in all its forms should invite people to envision the fuller reign of God and must necessarily include a concern for the well-being of His entire creation.

Mohamed (2012:14) argues that although many Islamic movements that promote environmental ethics (like Green Deen) are very much under-represented in eco-theological literature, these movements are slowly becoming a very strong influence in the Muslim world. These movements are also managing to build strong alliances for ecological change in the Western world (*ibid*). Furthermore, Mohamed (2012:16) suggests three important reasons for focusing on EE in the formulation of an Islamic environmental ethic. She states:

Firstly, EE has the transformative ability in alerting us to think about, understand and fundamentally change the conditions that have led to social and environmental injustice. Secondly, educational interventions have been widely regarded as the primary avenue for translating the eco-ethics of Islam into action and thirdly, EE has the potential to be liberatory, raising the social and ecological consciousness and culminating in praxis which agitates for the common good of all Creation.

Therefore, according to Mohamed (2012), EE has a significant role to play in finding the solutions that Muslim schools and the Muslim community will employ when trying to address environmental injustices. The Muslim school setting, being the primary source of the process of imparting education within the Muslim community, will also begin to eventually emerge as being the main source of the implementation of Islamic environmental ethics. There will also be a greater awareness and an understanding concerning the environmental ills, created within the Muslim society through the implementation of EE at school level. Memon and Ahmed (2006 cited in Mohamed 2012:169) also believe that Muslim teachers, by expressing what the Islamic tradition has to offer, may be able to add to the discourse that reframes current educational practices. Hence Abu-Hola (2009:196) affirms the need for well-trained, dedicated, religious, socially and environmentally literate teachers. This need would hold true for teachers employed at Muslim schools as well.

Mohamed (2012:14) believes that the environmental questions that we are facing today will not be addressed by merely adopting apolitical techno-centric interventions. She states that the main cause of the wretched conditions on earth coupled with the widespread prevalence of hunger and thirst in the world is due to a general spiritual and moral vacuum within prevailing worldviews and values as well as the newly-found culture-ideology of consumerism. Religion, according to Mohamed (*ibid*), EE is regarded as the “well-spring” of care and motivation of any society. As such, religious principles ought to be upheld if society wants to address environmental issues. In this regard, Mohammed (*ibid*) states:

The earth cannot afford to lose the religious ethos which links faith and action, knowledge and practice, and social and ecological justice. And the environment cannot afford to lose the opportunity of tapping into the wealth of religious resources.

Shobeiri, *et al.* (2013:91) conclude that even if some religions did not actively participate in environmental issues in the past, the sacred texts and dogmas of most if not all religions do not reflect incorrect behaviours towards the environment in any way. This conclusion applies to Islam as well. In the next section, the discussion is focused to all those factors that enable and constrain the implementation of EE as suggested in literature.

### **3.5 SOME FACTORS THAT ENABLE AND CONSTRAIN THE IMPLEMENTATION OF ENVIRONMENTAL EDUCATION IN SCHOOLS**

Literature suggests that there are many factors that may either contribute to or constrain the implementation of EE in schools (Carvello, 2009:54; Dymont & Hill, 2015:24; Evans, Whitehouse & Gooch, 2012; Kimaryo, 2011:18; Maluleke, 2015:07; Nsubuga, 2011:115; Reddy, 2011:16). The design of the curriculum may in itself be a factor that either constrains or enables the implementation of EE (Maluleke, 2015:05; Varvaro, 2015:21).

Kimaryo (2011:34) believes that there is no universal approach to implementing EE. Hence Kimaryo (*ibid*) suggests three common approaches to EE implementation. First, EE may be treated as a separate subject. In this approach, EE will be allotted its own time and content. In addition, Kimaryo (2011:40) maintains that most teachers tend to prefer this approach as it is manageable and easier to implement. However, this approach has been criticised with the argument that the environment intrinsically is regarded by many EE scholars as a cross-curricular issue. Hence the implementation of EE should also be facilitated in a cross-curricular manner. Another argument is that the approach that separates EE is perceived as being contrary to the aim of EE, which is to strengthen the relationship between humans and their environment. Therefore, the Tbilisi Declaration clearly outlines that EE should be integrated into all learning

programmes for all learners (UNESCO, 1977:20). This aim according to the critiques may not be achieved if EE is a single, separate subject (Kimaryo, 2011:35).

Second, EE may be implemented in a cross-curricula manner (Kimaryo, 2011; Radeiski, 2014:11; Varvaro, 2015; Wals, Brody, Dillon & Stevenson, 2014:584). In this approach, EE is regarded as holistic as it draws on topics from different subjects and different perspectives. This approach has also been criticised as it demands time, resources and specialised skills during implementation (Kimaryo, 2011; Maila, 2003:41). Furthermore, this approach creates many challenges as learners may also fail to clearly comprehend what each discipline has to offer in the way of interpreting topics related to EE. Kimaryo (2011:38) also observed that in the integrated approach, EE is sometimes treated “lightly” and hence only a “diluted” form of EE is implemented.

Third, EE may be implemented by organising the curriculum around important environmental issues. Kimaryo (2011:39) prefers this approach as “relevant and holistic learning” of EE is facilitated thereby. In this approach, the curriculum is designed to relate to real-life environmental issues instead of drawing on specific topics from different subjects. This approach will also enable learners to develop critical thinking skills as they would be identifying, classifying and analysing data related to EE issues (*ibid*).

Maluleke (2015:08) posits that although the Department of Education has tried to facilitate EE by including it in the national curriculum, much of the interpretation and implementation of EE rests upon the shoulders of the teachers. Among the factors that constrain the implementation of EE in schools is teachers’ lack of environmental literacy. According to Kimaryo (2011), teachers play a significant role in the development of an environmentally literate citizenry. In addition, Kimaryo (2011:17) believes that many teachers do not implement EE simply because they are not environmentally literate. Hebe (2009:01) emphasises the importance of environmental literacy more especially among teachers. In this regard, Hebe (*ibid*) suggests that teachers worldwide have a significant role to play in the development of environmentally literate citizens equipped with the skills, knowledge, attitudes and behavioural traits that support and promote the adoption of sustainable lifestyles. Accordingly, it is essential

that the teachers themselves possess a high level of environmental awareness, and that they be able to instil in their learners the ability to think creatively and to apply theoretical environmental knowledge to the solving of concrete local problems.

Mohamed (2012:258) defines ecological literacy, in the Islamic context, as the awareness-building of the environmental knowledge of Islam. This awareness should inadvertently impact upon the behaviour of a Muslim, in the manner in which a Muslim discharges his or her responsibility in the universe, towards his or her Creator, humankind and the natural world. Maluleke (2015:07) cited three separate studies wherein teachers complained about various constraining factors for the implementation of EE. Among these, the common factors cited were, inter-alia, lack of time, lack of resources, inadequate teacher-training on the implementation of EE in a cross-curricular manner and “overcrowded time tables”. In addition, Maila (2003:81) also maintains that in most schools, teachers do not have adequate time for environmental learning. Maila (2003) conducted a study regarding an outreach programme that took the form of workshops on environmental literacy for teachers, initiated by University of South Africa (Unisa). It was discovered that most teachers attending these workshops complained that time was too limited. These teachers could not engage themselves fully in practical activities like developing cross-curricular learning programme units (Maila, 2003:102). In a study conducted by Carvello (2009:55), the lack of support from management (SMT) to implement environmental learning was also cited as a constraining factor. These findings concur with that of Varvaro (2015:54) who recommends that for successful EE implementation, it is imperative that school administrators have regular workshops related to the professional development of teachers directly aimed at EE implementation.

Dyment and Hill (2015:22) carried out a study regarding the interpretations that novice teachers in Australia have regarding the term “sustainability” and “sustainability education”. Dyment and Hill’s (*ibid*) investigation revealed that generally most teachers had a limited understanding of the term “sustainability”. The authors attributed their findings to certain enabling and limiting factors. Among the constraining factors identified by the study were an overcrowded curriculum, insufficient teacher knowledge,

and lack of training opportunities in sustainability education. Dyment and Hill (*ibid*: 30) recommend that teacher training courses should focus on developing teacher competencies in content-knowledge on environmental concepts such as sustainability in addition to pedagogical knowledge. They (*ibid*) also suggest that teachers should be trained on EE implementation in a cross-curricular manner.

Attitudes that learners and teachers of a school display towards the environment may also affect the manner in which EE is implemented therein (Varvaro, 2015:39). In a research conducted regarding the environmental attitudes of young people in Turkey, (Tuncer, Ertepinar, Tekkaya & Sungur, 2005:216), it was discovered that setting up an EE programme aimed at specifically primary students posed a great challenge. Although there have been several attempts to include subjects related to the field of EE in the school curriculum, these did not go beyond the sixth, seventh, or eighth grades. The reason for this as cited by Tuncer, *et al.* (2005) is that there is a more creative implementation of EE in privately – managed schools than in the public schooling system. This is due to the greater availability of financial, physical and functional resources in these privately-managed schools. These factors allow EE in such schools to be more widespread (Tuncer, *et al.* 2005). Muslim schools in South Africa are also privately-owned, and as such, it may be expected that these school might not experience lack of resources as a constraint to EE implementation.

Tuncer, *et al.*'s (2005) findings also showed that the attempts by non- governmental organisations (NGO) in the field of EE and its implementation have only reached a limited number of learners. Among the primary factors that underlie this challenge is lack of teachers who have been trained in this field. Other factors include the lack of having a target and strategy on EE. Furthermore, Tuncer, *et al.* (2005) believe that any EE strategy should purposefully be based on a child's understanding of the environment, rather than the assumptions about what children know and believe about the environment.

Besides the type of schools that learners attend, according to Tuncer, *et al.* (2005), gender also is an important factor affecting a learner's environmental attitude. It was found that 89% of men in Turkey were more environmentally literate as compared to



72% of women. This variance was due to the fact that most girls in the eastern part of Turkey do not attend school due to economic and traditional reasons. Despite the fact that Turkish culture is a male-dominated one, mothers of Turkish learners tend to set the household level of education. As a result, the level of education of mothers played a significant role in the environmental literacy, awareness and attitudes of young Turkish learners. From the above study, it may be concluded that in addition to learner attitudes to the environment, other factors such as finances, patriarchy, culture and the education level of parents of learners are all factors that either hinder or enable EE implementation in schools.

However, the above evidence contradicts the findings of a study carried out about the relatively male-dominated Lebanese culture by Makki, Abd-El-Khalick and Boujaoude (2003). Their findings showed that the learners in Lebanon, which is also predominantly Muslim, whose father's level of education was higher, displayed significantly more environmental literacy than those learners whose father's level of education was lower. This was not in any way related to the education level of their mothers. Makki, *et al.* (2003) explained that in Lebanese culture, the fathers set the tone for level of household education. Therefore, these findings suggest that the education level of an influential parent in a particular community plays a significant role in shaping the environmental literacy levels of learners. Their findings also showed that "Lebanese high school students held relatively uniform and favourable attitudes toward the environment, but had inadequate knowledge of basic environmental concepts and issues." So, the lack of these important concepts prevented these learners to make significant informed choices regarding the environment.

The findings of Makki, *et al.* (2003) remarkably correspond with that of a recent study carried out by Sarfo-Mensah and Oduro (2010) in Ghana. Their study focused on the changes in attitudes as well as the perceptions that people living in the forest-savanna transitional zone of Ghana have regarding the natural environment. Sarfo-Mensah and Oduro (2010 in Awuah-Nyamekye, 2012: 87) observed:

In Ghana, recent studies point to an increased disregard for traditional rules and regulations, beliefs and practices that are associated with natural resources management.

Therefore, it is quite evident that more awareness campaigns and programmes about sustainability and the management of the earth's natural resources need to be embarked upon in many countries across the globe. The primary level of the implementation of such programmes ought to begin at school level. Hence the significant role that EE plays in such awareness programmes must never be underestimated.

A study conducted by Karodia (2010) about environmental awareness and practice at Muslim schools in South Africa found that EE has been integrated into the curricula of many Muslim Schools. The integration of EE was chiefly due to the dictates of the South African National Curriculum. However, Karodia (2010) felt that while participation in environmental projects like tree-planting exists at many Muslim schools, EE is still not fully integrated across the curriculum (see also Mohamed, 2012:241). Karodia (2010) suggests that EE, based on the teachings of the noble Qur'aan and Sunnah (Prophetic methodology), could be an important step in the Islamisation of the current curricula existing at Muslim Schools. Environmental audits; gardening and greening projects; and school environmental mission statements are among the suggestions presented by Karodia (*ibid*) towards incorporating EE into current curricula in Muslim Schools.

Mohamed (2012:240) found that the Association of Muslim Schools-South Africa (AMS-SA) together with Awqaf South Africa, co-hosts an annual greening competition among Muslim Schools. This greening project encourages learners to engage in tree-planting and food gardening in needy communities and neighbouring schools. However, AMS-SA, according to Karodia (2010:160), needs to play a more proactive and pivotal role in developing and sustaining EE as an integral part of the Muslim school curriculum. Furthermore, Mohamed (2012:241) states that AMS-SA provides a range of services to Muslim Schools such as, inter-alia, teacher professional development workshops, inter-school activities and curriculum development opportunities. However, these workshops and programmes still need to address ecology and environmentalism.

The Islamia College, a Muslim School situated in the Western Cape Province, actively encourages learner-participation in environmental initiatives. Among such initiatives is the 'YES programme' or the Youth Environment Schools hosted by the City of Cape Town, that seeks to achieve the goals of EE and environmental awareness via a variety of projects, activities and resources (Mohamed 2012:241). These activities include annual school camps that provide out-door education opportunities and utilise the services of environmental centres. Learners are also encouraged to participate in an annual environmental conferences as well as participation in science and environment competitions through the YES programme.

### **3.6 SUMMARY**

In this chapter, the understandings that underpin the concepts of "environment" and EE in the Islamic theological discourse were outlined. Thereafter, the discussion was focused on the manner in which knowledge is conceptualised in the Islamic theological discourse. The next section dealt with the concept of "Muslim School" within and outside the South African context. A discussion on eco-theology and the eco-theological movement both abroad as well as locally followed thereafter. Next an analysis of the factors that constrain and enable the implementation of EE suggested by literature was observed. This chapter concluded with a discussion on EE in the global context of the Muslim world. In the next chapter, the methodology that was employed to conduct research for this study will be discussed.

## **CHAPTER 4:            METHODODOLOGY**

### **4.1 INTRODUCTION**

In the previous chapters, the conceptual and theoretical frameworks of this study were examined. The conceptual framework outlined the various understandings that underpin the concepts of “environment” and EE as suggested by EE scholars. The theoretical framework focused on the manner in which these concepts (environment and EE) as well as the way in which knowledge is conceptualised within the Islamic theological discourse. The concept of “Muslim School” within and outside South Africa was also contextualised in the previous chapter. A discussion on eco-theology and the eco-theological movement as well as an analysis of the factors that constrain and enable the implementation of EE as suggested by literature was observed. The previous chapter concluded with a discussion on EE in the global context of the Muslim world. In this chapter, the methodology that was followed in the process of the study is discussed. In this study, I investigated the factors that enable or constrain the implementations of EE at Muslim Schools in Gauteng Province.

The main research question that this study purposed to address was:

- What are teachers’ experiences of the implementation of EE in the selected Muslim schools in Gauteng Province, South Africa?

The subsidiary questions were:

- How do teachers teaching in selected Muslim schools in Gauteng Province understand the concept ‘environment’?
- How do teachers teaching in selected Muslim schools in Gauteng Province understand the concept ‘environmental education’ (EE)?
- What do the teachers perceive as enabling factors regarding the implementations of EE in selected Muslim schools in Gauteng Province?
- What do the teachers perceive as constraining factors regarding the implementations of EE in selected Muslim Schools in Gauteng Province?

- How can the constraining factors be addressed to allow the implementation of EE in selected Muslim schools in Gauteng Province?
- How can the enabling factors that allow for the implementation of EE be sustained in selected Muslim Schools in Gauteng Province?

This chapter is composed of eleven sections. First, a brief review of literature on the role of methodological framework on the study is presented. Then second, the ontological and epistemological assumptions underlying the study are discussed. In this section, the philosophical assumptions underlying various major research paradigms in order to justify the choice for this study's paradigm is examined. Third, the research approach is discussed and, fourth the research design chosen for this study is described and explained. This is followed by, fifth, the presentation of the data collection methods and sixth, the sampling technique employed in the study. Thereafter, seventh, a discussion on the primary and secondary data collection methods of the study is presented. This is followed by, eighth, a discussion on the data analysis process employed in this study. Ninth, the processes followed for rigour in the study are discussed, followed by, tenth, a discussion on the study's related ethical issues. The last section is a reflection on the research process of the study. Therefore, the following section commences with the research methodology adopted by the study.

## **4.2 RESEARCH METHODOLOGY**

Scotland (2012:09) defines a research methodology as the strategy that lies behind the choice and use of a particular method employing specific techniques to collect and analyse data. Thus, a researcher need to acquire a clear understanding of the methodologies employed in undertaking any research project (Elman, Kapiszewski & Kirilova, 2015:39). Research methodology encompasses various aspects of the research process, including the paradigm within which the research is located, the research design and the research approach. Therefore, this section commences with a discussion on the various paradigms with the intention to locate this particular study within the most appropriate of the paradigms. Thereafter, the research approach and research design of this study are discussed.

### **4.2.1 Research paradigm**

Bahari (2010:18) explains that whether a researcher decides to conduct a study that is related to the social sciences or the natural sciences. Nevertheless, it is imperative for the researcher to formulate some form of research philosophy prior to carrying out the investigation (see also Snape & Spencer, 2003:02). This kind of philosophy provides the ontological and epistemological assumptions of the study. Resca (2009:01) explains that any research activity undertaken is epitomised by these two concepts, namely; epistemology and ontology. According to Crotty (1998:10), ontology is the “study of being, of what exists and of what is think-able.” In ontology, we want to know how things come into existence. We are also interested in the reasons for such things coming into being. Scotland (2012:09 see also Allison & Pomeroy 2000:92) regards ontological assumptions as those assumptions that are concerned with what constitutes reality. Reality, according to Allison and Pomeroy (2000:92), is either out there still to be discovered, or it may also be a socially-constructed concept.

When a researcher begin to focus on how knowledge can be gained on the things that are the subject of the study by applying a particular procedures, methods, concepts, rules or theories, this focus is referred to its epistemology (Bahari, 2010; Scotland, 2012). In other words, epistemology refers to the manner in which knowledge come to be known (Resca, 2009:01). Cohen, Manion and Morrison (2011:07) define epistemology as mainly being “concerned with the nature and forms of knowledge”. In other words, an epistemological assumption explores how knowledge is created, acquired and communicated. Allison and Pomeroy (2000:92) also agree that epistemologists continuously question the sources and the assumptions upon which the framework of knowledge is based.

The quality of the research as well as the methods employed by the researcher during the research process largely depends on the underlying research philosophy (Bahari, 2010:18). There are many philosophies, also referred to as paradigms, which may be chosen by researchers to underlie their studies. Blaxter, Hughes and Tight (2010:61) identify five paradigms on which social science researchers base their research. These are positivism, post-positivism, interpretivism, critical and postmodern paradigms. The

two that are mainly debated upon in this study due to their opposing ontological and epistemological assumptions are positivism and interpretivism. Starting with positivism, these two paradigms are discussed next.

#### **4.2.1.1 Positivism**

Positivism is based on the assumption that reality is external and measurable (Bahari, 2010:22). Hence knowledge will only be significant if it is derived from an external and measurable form of reality. McMillan and Schumacher (2010:05) state that positivism is a common method of knowledge generation. It forms the foundation of the scientific method of inquiry. It pivots around the idea that the study of humans could be carried out in exactly the same way as that of the study of nature. Therefore, positivists employ objective methods such as hypothesis-testing to explain phenomena (Bahari, 2010:23). Marsh and Furlong (2002:19) explain that in positivism, a “foundationalist” ontology and epistemology is usually employed. Therefore, a positivist researcher will try to search for “general laws and causal statements about social phenomena” employing the quantitative research approach (Bahari, 2010: 23; Scotland, 2012:10).

Onwuegbuzie, Leech and Collins (2010:696) state that the ‘first methodological wave’ was initiated by the quantitative research paradigm during the 19<sup>th</sup> century. This paradigm stems from the philosophy of logical positivism. It is used in many of the social and behavioural fields of study. The results of a quantitative study are said to be generalisable, that is, the results are made universally or generally applicable to the whole population. In other words, general conclusions and inferences are made from the results (Scotland 2012:10). Positivists are usually not really interested in the meaning of social phenomena but only the explanation of human behaviour. This particular study, on the other hand, was a search for meaning. The interest was in the teachers’ understanding of the term EE and their perspectives regarding the implementation of EE in the contexts within which they teach. As a result, the positivist philosophy would not have been an ideal paradigm for this study.

#### **4.2.1.2 Interpretivism**

Epistemologically, interpretivism assumes that knowledge is generated through value-laden socially constructed and subjective interpretations ( Lodico, Spaulding & Voegtle 2010:08; McMillan & Schumacher, 2010:06; Scotland, 2012:12). Among the goals of the interpretivist researcher is to understand and interpret human behaviour (Bahari, 2010:22) and other subjective experiences which are time and context bound (Booker 2008:15). Altrichter, Feldman, Posch and Somekh (2013:69) define experiences as events that have taken place in the settings wherein humans interact. Although systematic procedures are employed by researchers, the emphasis in the interpretivist paradigm is on multiple socially-constructed realities. Here, there is less emphasis on numbers and more emphasis on values and context. The main ontological assumption of interpretivism is that reality is relative and multiple (Scotland, 2012:09). According to this tradition, there can be more than a single structured way of assessing such multiple realities.

This study adopted the interpretivism paradigm because it sought to examine people's perspectives regarding the implementation of EE at the Muslim schools in Gauteng Province. Therefore, it believed that this knowledge can be obtained through the direct interaction with information-rich teacher participants teaching at the Muslim schools in Gauteng Province. The following section discusses the research design that was adopted in this study.

#### **4.2.2 Research design**

This study followed a descriptive case study design. A case study is defined as an in-depth study of a bounded system of cases which involve theories and practices (McMillan & Schumacher, 2010:344). Mcmillan and Schumacher (2010:344) further define the case study methodology as an "in-depth analysis of a single entity" (see also Creswell, 2008:476). A single case has to be first identified. Thereafter, the researcher will choose what needs to be studied with a bounded case. The bounded case could refer to any activity, event or process that is based on extensive data or being unique to place, time, and participant characteristics. According to Harris, *et al.* (2009:81), a case study involves the "meticulous investigation of individuals, groups, institutions or other



social units". The bounded case for this study was the teacher experiences of the implementation of EE in a particular case of Muslim schools. According to Mcmillan and Schumacher (2010:345), a case study is often regarded as a type of ethnography since the case study analysis shares many aspects of an ethnographic research. For example, both case studies and ethnographic studies are regarded to be in-depth investigations of single entities. Both research designs are innately qualitative forms of research employing inductive logic. However, McMillan and Schumacher (2010:345) opine that the case study is best regarded as a separate type of qualitative research. The reason for this, according to McMillan and Schumacher (2010:346), is that there is less emphasis on observation in case studies as compared to ethnographic studies.

Yin (1989) defines a case study as being "a flexible form of inquiry" whereby various phenomena are analysed within their natural contexts. Since the intention in this study was to gain a rich understanding of the activities related to EE at the different Muslim school sites, the case study design was the most appropriate. Barratt, Choi and Li (2011: 330) explain that a researcher that uses a case study may also adopt numerous methods incorporating "inductive logic" to collect qualitative evidence. This evidence may in turn be used to develop theories.

There are different types of case studies mentioned in literature. First, there are explanatory case studies. Researchers employ the explanatory case study design when the causal links in real-life phenomena are too complex for the survey or experimental strategies (Baxter & Jack, 2008:547; Yin, 2003). In addition, Barratt, *et al.* (2011:330) also suggest that a case study is utilised in instances when a study might be explanatory, while the context and participants' experiences may also be of a very critical nature. Second, a case study can be exploratory, that is, used to explore the assessment of an intervention that has unclear or multiple outcomes (Baxter & Jack, 2008:548; Yin 2003). Third, a case study may be descriptive. Descriptive case studies are employed when the researcher wishes to describe an intervention or phenomenon within the real-life context that it occurs (Baxter & Jack 2008:548; Yin 2003). This particular study is a descriptive case study because a description of the processes of

implementation of EE in Muslim schools (a real-life context) was the main purpose of the study.

Fourth, McMillan and Schumacher (2010:344) add that when a number of individual cases are combined in a single study, the investigation may be called a collective case study. Collective case study, multiple case studies and multi-site case study seem to mean the same design or are closely related. As such, these concepts are used interchangeably in some literature (Bishop 2010). Fifth, according to Baxter and Jack (2008:547), a multiple case study is usually needed when a study is made up of more than one single case. A few cases are investigated so that the researcher may understand the “similarities and differences between the cases”. A multiple case study, according to Baxter and Jack (2008:548), allows for the exploration of the “differences within and between cases”. In multiple case-studies, comparisons are also usually made, so the researcher must first try to choose cases very carefully and then try to replicate data “across cases”.

Baxter and Jack (2008: 549) further suggest that researchers should judge whether it is wiser to embark on a single case study or to rather consider conducting a multiple case study. This decision will chiefly depend on the extent to which a richer and deeper understanding of the phenomenon under discussion will be gained. During the field work of this study, multiple sites, being the five different Muslim schools were accessed. Therefore, this study may be regarded as a multi-sited case study (Falzon, 2012:01). The research authenticity is improved when a multi-sited or multiple case study is conducted (Barratt, *et al.* 2011:331). Also, the researcher may be able to protect himself, or herself against “observer bias” during the multiple case study approach. Barratt, *et al.* (2011:331) justify their view by stating that a more solid and “testable theory” will be formulated after using multiple cases than using a single case study, especially when the researcher wants to build a theory. Moreover, Barratt, *et al.* (2011:331) specifically suggests that in the range of four to 10 cases is often an ideal amount for such an investigation. Because data for this study was collected in five sites, the multiple-site case study was chosen as a design. The selection of different sites was for the reasons suggested by Barratt, *et al.* (2011), namely, to protect myself from

possible biases in the field and for the general authentication of the research process. In the following section, the focus is on the research approach of this study.

#### **4.2.2 Research approach**

In line with the paradigm in which this study is located, a qualitative research approach was followed. A qualitative approach is commonly employed by relativists in order to gain a rich, in-depth description of the phenomenon (McMillan & Schumacher 2010:06; Poetschke, 2003). This approach occurred during the period which was known as the “second methodological wave” (Onwuegbuzie, *et al.* 2010:696). Those scholars who disagreed with the tenets of logical positivism began to increasingly adopt the qualitative research approach (*ibid*).

According to Strauss and Corbin (2008:12), in the qualitative approach, meanings that are determined are usually formed “through and in” cultures and to examine the “inner experiences” of participants. The qualitative researcher tries more to discover rather than to test variables as it is the case with quantitative research. Furthermore, Strauss and Corbin (2008:13) argue that a qualitative research approach is dynamic and evolving in nature as opposed to the inflexible quantitative approach. Harris, Gleason, Sheean, Boushey, Beto and Bruemmer (2009:80) discuss the common reasons and situations when a qualitative approach is usually warranted. Among such instances are when a phenomenon is not easily measurable, or if processes must be evaluated, or when knowledge is limited about a certain culture.

Tillery, Varjas, Meyers and Collins (2010:88) explain that a qualitative study is mostly “guided by the participant’s view”, and this view, in turn is the driving force of the data analysis. These authors argue that participants’ views are analysed against empirical and theoretical literature which are also significant components of any qualitative study. Unlike quantitative research, which is linear in nature, Neuman (2000:124) explains that qualitative research is cyclical and non-linear. The qualitative researcher sometimes has to move backwards and side-wards before moving on. In doing so, the qualitative researcher is every time able to collect new data and gain new insights.

In qualitative research, phenomena are understood in “uncontrolled, context specific settings” (Harris, *et al.* 2009:80). Moreover, qualitative research is inductive in nature because theory gets generated from emerging data unlike in quantitative approach where research often commences deductively from a hypothesis based on existing theories (Harris, *et al.*, 2009:88). Also, unlike in a quantitative research, that is mostly driven by hypotheses that were predefined, or by some form of theory, in a qualitative research, data collection and data analysis form the basis for deriving theories. This particular study, however, was not intended to develop new theories. Instead as suggested by Barratt, *et al.* (2011:330), a qualitative approach was employed to gain a rich in-depth description of a special phenomenon, which is the implementation of EE in Muslim schools. According to Harris, *et al.* (2009:82), a qualitative researcher is “concerned with meaning, participant perception, and culturally specific language and symbols”. Owing to the gathering of detailed data and observation, qualitative research is sometimes perceived as being highly labour-intensive. This study focused on examining the experiences of teachers teaching at Muslims schools regarding the implementation of EE as part of the Curriculum Assessment Policy Statement (CAPS). Therefore, it was inevitable that the study follows the conventions of qualitative research rather than quantitative approach.

Lately, it has become a practice of many researchers to mix both quantitative and qualitative approaches in their research design (McMillan & Schumacher, 2010: 395). This approach is commonly known as the mixed method design. However, a deep understanding of both qualitative and quantitative approaches will be needed to ensure that the data obtained is credible (McMillan & Schumacher, 2010:397). For this particular study, mixing the approaches was not necessary because there was no intention to quantify or test the required knowledge. In the following section, the participation inclusion and exclusion criteria employed in this study are discussed.

### 4.3 Sampling strategies and criteria

McMillan and Schumacher (2010:325) define sampling in qualitative research as a selection of information-rich cases for an in-depth study. Furthermore, McMillan and Schumacher (2010: 328) maintain that qualitative inquirers regard sampling processes as “dynamic, ad hoc and phasic rather than static”. Unlike quantitative research samples that are usually large to accommodate statistical analyses, in contrast, qualitative research samples are usually small (Borrego, Douglas & Amelink, 2009:57). In essence, the logic behind any sample size is mostly related to the purpose of the study, the research problem itself, the major data collection strategy, and the availability of information-rich cases (McMillan & Schumacher, 2010). Consequently, insights generated from qualitative studies, according to McMillan and Schumacher (2010), depend more on the richness of information of the cases and the analytical abilities of the researcher than on the sample size itself.

Sampling strategies also depend on whether the research approach is qualitative or quantitative. Harris, *et al.* (2009:84) identified sixteen types of sampling techniques, some of which are appropriate for quantitative studies. For example, when the researcher wishes to formulate a “balanced” viewpoint of the phenomenon being researched, often the researcher will select a “large variety” of individuals. This type of sampling is also known as maximum variation (Harris, *et al.*, (i2009: 81) and it is a quantitative research sampling technique. Another example of quantitative sampling is the extreme case sampling which is applied when the researcher intends to ‘compare and contrast’ certain extremes regarding the concept being studied (Harris, *et al.*, 2009).

One of the examples of qualitative research strategies is the theoretical sampling. When participants are selected because they understand or experience a “given theoretical concept”, then the researcher will use theoretical sampling (Guest, Bunce & Johnson 2006:59; Harris, *et al.* 2009:81; McMillan & Schumacher, 2010:326). In addition, Barratt, *et al.* (2011:331) suggests that researchers who employ case studies often use the “theoretical or biased sampling” technique instead of utilising “statistical sampling from a defined population”. In the theoretical approach, the selected cases are chosen on the basis that they will either “predict similar or contrary” findings. Snowball sampling is

another example of qualitative strategies. When selected participants are asked to identify other experienced, information-rich participants who would also be part of the sample size, the snowball sampling technique is employed. In this technique, those participants that were selected by the initial chosen participants are often requested to “identify more people until participant saturation has been reached” (Harris, *et al.*, 2009).

The most commonly used of the qualitative sampling strategies is purposive (also called non-probabilistic) sampling. Harris, *et al.* (2009:84) and McMillan and Schumacher (2010:325) maintain that in purposive sampling the researcher tries to find some special features that purposefully relate to the phenomenon or intervention being studied. This type of sampling is very much systematic as only certain individuals with certain characteristics will become part of the sample. On certain occasions, the intention of the researcher selecting a specific sample may be based on the notion that the researcher wishes to generalise the findings of the study, using this specific selected sample, to the larger target population that has “like individuals” cite. However, this is a rare occurrence. Furthermore, Guest, *et al.* (2006:59) posits that the sample size used in purposive sampling usually depends on a concept which they have coined as the “point of saturation”. At this point, no new data is usually observed. Therefore, Guest, *et al.* (2006: 59) argues that the point of saturation fails to provide a solid framework for sample size estimation before data -collection during a qualitative study.

The sampling strategy for the selection of school sites was the convenience sampling strategy. The sampling strategy for the selection of the participants in this study was purposive. Firstly, according to the official website of the Association of Muslim Schools, South Africa (AMS-SA), there are currently 25 affiliated Muslim schools that are operational in the Gauteng Province. These schools span into various metropolitan regions within the province. These 25 schools formed the total population from which this study’s sample was selected. Therefore, the sample composed of five Muslim schools in the Gauteng Province which were selected following the convenience sampling strategy. Among the advantages of the convenience sampling strategy is the easy accessibility of sites and participants (Tariman, Berry, Cochrane, Doorenbos &

Schepp, 2010). The selected Muslim schools were situated in close proximity to each other. It was easy to gain access to the selected sites during data collection. Secondly, the information-rich teacher participants were then purposefully selected from these schools. The phenomenon being studied was the enabling and restrictive factors regarding the implementation of EE at Muslim schools. Thus the teachers that implement EE in Muslim schools have the first-hand experience of the phenomenon being studied. They also understand this phenomenon much better than other teachers who teach in other schools. Teachers who facilitate a subject or learning area that has an EE focus critically designed into its curriculum were eligible for participation. Such subjects include Life Sciences, Social Sciences, Life Orientation, Geography, Islamic Sciences and the Natural Sciences. It is also noteworthy that owing to the scarcity of teachers in privately-managed schools, some teachers teach more than one subject in such schools. In addition, any teacher that is currently part of a functional enviro-club of the school (if such a club exists) was also eligible to participate in the study.

It was also envisaged that at least one specific participant at each site preferably be a member of the School Management Team (SMT). This is due to the fact that the implementation of any curriculum, such as EE, in any privately managed-school, is first decided by the managers. Another reason is that one of the main objectives of EE is to integrate the principles of a sustainable society into whole school development (Loubser, 2008: 01). This type of integration is only possible if managers at every level of curriculum implementation contributes to EE implementation in some meaningful way. Three teachers in each of the five selected Muslim schools were requested to participate. Thus a total of fifteen teachers participated. The table appearing below gives a brief summary of the research sites.

Table 4.3: Summary of sites visited

| School Pseudonym                     | Teacher Pseudonym | Subject/s teaching  | Phase                   | Designation  |
|--------------------------------------|-------------------|---|-------------------------|--|
| School A:<br>Cahira Islamia School   | Mr Shadwell       | Life Sciences,<br>Natural Sciences,<br>Technology,<br>Mathematics | FET, Senior             | Level 1 Teacher  |
|                                      | Mrs Soofia        | Natural Sciences,<br>Mathematics                                  | Senior,<br>Intermediate | Level 1 Teacher  |
|                                      | Mrs Samia         | Physical Sciences,<br>Natural Sciences                            | FET, Senior             | Level 1 Teacher  |
| School B:<br>Topkapi Muslim School   | Mr Sono           | Physical Sciences,<br>Natural Sciences                            | FET, Senior             | Level 1 Teacher  |
|                                      | Mr Tariq          | Social Sciences,<br>Technology                                    | Intermediate            | HOD  |
|                                      | Mrs Senna         | Life Sciences,<br>Natural Sciences                                | FET, Senior             | Level 1 Teacher  |
| School C:<br>Allamah Ghaamidi School | Mrs Sarah         | English<br>Afrikaans<br>Life Skills<br>Mathematics                | Foundation              |  |
|                                      | Mr Mukhtar        | Islamic Sciences<br>Life Orientation                              | FET, Senior             | HOD<br>SMT member  |
|                                      | Mrs Nazia         | Life Orientation  | Intermediate            | Level 1 teacher<br>Eco-club<br>co-ordinator<br>Admin staff |



|   |           |  |                        |                 |
|---|-----------|--|------------------------|-----------------|
| School D:<br>Allamah Aaloosi<br>School    | Mrs Faria | Life Sciences<br>Natural Sciences                  | FET<br>Senior          | Level 1 teacher |
|   | Mrs Najma | Life Skills  | Foundation             | HOD<br>SMT      |
|   | Mr Bennet | Life Orientation<br>Technology<br>Islamic Sciences | Intermediate<br>Senior | Level 1 teacher |
| School E:<br>Pasha Mahmud Turki<br>School | Mr Pondo  | Physical Sciences<br>Natural Sciences              | FET<br>Senior          | Level 1 teacher |
|   | Mr Haji   | Geography<br>Social Sciences                       | FET<br>Senior          | HOD<br>SMT      |
|   | Mr Lee    | Life Sciences<br>Natural Sciences                  | FET<br>Senior          | Level 1 teacher |

Creswell (2012:133) posits that it is important that the purposefully selected participants be honest and be willing to “share information”. Therefore, the setting upon which interviews will be conducted must be warm and comfortable enough for the participants to feel free to speak openly when sharing information. Therefore, in this study, rapport with the participants was established by greeting them politely and by speaking to them in a friendly manner. In this way, more honest information was believed to be elicited from the participants during the data collection phase.

Barratt, Choi and Li (2011: 330) explain that a researcher that uses a case study may also adopt numerous methods incorporating “inductive logic” to collect qualitative evidence. In the next section, the discussion is focused on the methods of data collection for this study.

#### **4.4 Data collection methods**

McMillan and Schumacher (2010:326) identify five major methods for gathering qualitative data. These are, inter-alia, observation, interviews, questionnaires, document review, and the usage of audio-visual materials. To this list, Harris, *et al.* (2009:85) add details on some of the methods by mentioning focus group interviews, documents inspection, photograph inspection, the Delphi technique, and Internet methods (see also

Barratt, *et al.*, 2011:331). Stemming from these above-mentioned methods, the researcher will then begin to draft field notes.

Among the qualitative data collection methods, the three methods that were followed in this study are firstly, semi-structured interviews, secondly, field observations and thirdly, document analysis. Semi-structured, face-to-face interviews were conducted with the selected, information-rich teacher-participants. The Muslim school sites were also observed to identify factors that could enable or constrain the implementation of EE. Islamic documents such as the Qur'aan and Prophetic Traditions (known in Islamic Terminology as 'Ahadith') were analysed to examine their content in relation to the environment and EE. In addition, the national curriculum statement as stated in the CAPS document was analysed to identify its content in relation to the implementation of EE in South African schools' curricula. Starting with interviews, these three methods of data collection are discussed in the next section.

#### **4.4.1 Forms of interviews**

Lodico, Spaulding and Voegtle (2010:121; see also Altrichter, Feldman, Posch & Somekh 2013:100; Turner 2010:754) maintain that interviews form the major component of many qualitative studies, especially when it is difficult to observe a specific behaviour that is the subject of interest to the researcher. Interviews are also employed when the researcher wants to corroborate or verify an observation. Therefore, Lodico, *et al.* (2010:121) defines an interview as "a purposive conversation with a person or a group of persons" that is regarded as information-rich for a particular research topic.

Altrichter, *et al.* (2013:101) suggests that during the interview, the researcher needs to reflect carefully on what information is wanted and why this information is necessary. In addition, Altrichter, *et al.* (2013) further recommend that the researcher formulate questions, that are either central to the research question, or such questions that will enable the researcher to reflect more deeply on sensitive issues. However, this does not mean that the researcher should ask the questions in this form in the interview, because pre-formulated questions tend to take the researcher's attention away from the interviewee and the dynamics of communication (Altrichter, *et al.* 2013). This advice

was taken during this study and probing was carried out to elicit the experiences of the participants about the research topic.

The main criterion used to distinguish whether an interview is considered to be in-depth, semi-structured or structured is the type of questions that will be asked during the interview itself (Harris, *et al.* 2009:85). First, according to Harris, *et al.* (2009) questions in structured interviews are formulated in such a manner that they need “limited” responses, thus referred to as closed questions. Second, there is the in-depth interview. Furthermore, Harris *et al.* (2009) maintain that usually very general questions are asked during an in-depth interview as the interviewer wants to explore the phenomenon in an “unbounded” manner. This type of interviewing relies on probes and immediate “follow-up questions” based on the interviewees’ responses (Harris, *et al.* 2009). According to Tillery, *et al.* (2010:08), participants’ views, during an in-depth interview, are not influenced by ‘predetermined survey responses’ or by ‘specific case reviews’. This allows the participant to voice their unbiased opinions about an issue. Turner (2010:755) believes that this type of interview is regarded by many researchers as a very flexible way of soliciting information due to it being devoid of structure.

The third type is semi-structured interviews. In semi-structured interviews the interview guides are employed (Harris, *et al.* 2009; Turner, 2010:754). In addition, Harris, *et al.* (2009) posits that although questions are open ended in semi-structured interviews, the participants’ responses are limited to specific “topics”. Among the benefits of conducting a semi-structured interview accorded by Tillery, *et al.* (2010:88) is that questions are often ‘pre-formulated’ but allowing flexibility. This allows for the interviewer to deliver questions with a sense of easiness but at the same time also allowing for an expansion of the question format that would be supported by probes. McMillan and Schumacher (2010:344) also suggest that semi-structured interviews are characterised by probes and pauses rather than by particular question formats. These probes include establishing trust, being genuine and such voice intonation that the researcher hears and connects with the participants elicit more valid data than a rigid approach. Semi-structured, face-to-face interviews are also cyclical and non-linear in nature cite.

The primary data collection method for this study was face-to-face semi-structured interviews (see Appendix A). These interviews were recorded during data collection. McMillan and Schumacher (2010:421) consider tape recordings of any event as a primary source for data collection. In this regard, Altrichter *et al.* (2013:92) state that tape-recordings capture the sounds of a situation. Compared with direct observation, some information is lost in a tape-recording. For example, the surroundings and all non-verbal communication such as movements, facial expressions and gestures during the recording session are not experienced when listening to the tape recording. However, a more complete record is made of the sounds than is possible in direct observation. The focus now is on the secondary data collection method of this study which is field observations.

#### **4.4.2 Field observations**

Lodico, *et al.* (2010:116) posit that qualitative researchers prefer to employ observation as a data collection tool as it allows for a rich description of the phenomenon that is being studied. In addition, McMillan and Schumacher (2010:350) explain that observation is a means for a researcher to see and hear what is naturally occurring in the research site. They describe observation as the “mainstay” of qualitative research as it facilitates a deep, richer understanding of the context and participants’ behaviours (McMillan & Schumacher, 2010:350). Observation also allows for a collection of a more complete set of data. It also allows the observer to reflect on the important effect that context has on the phenomenon being studied. Hence, in addition to acquiring the skill of what to observe, the researcher must also know how to record the observation (Lodico, *et al.*, 2010). Begum (2015:89) defines observation as a description of behaviours or events in the context of a study that allows the researcher to describe the context using his or her five senses.

Lodico, *et al.* (2010:117 see also Begum 2015) maintain that there are four different levels of researcher-participation during field observations. These include “complete participant, complete non-participant, participant as observer and observer as participant”. When the researcher assumes the role of a complete participant in a study, the researcher becomes part of the group of participants and will therefore participate in

the group's activities. However, the group of participants remains unaware of the research role that the researcher assumes. This is opposite to when a researcher is a complete non-participant (complete observer) in which case the researcher is not a member of the group and does not participate in group activities. In the event that the researcher assumes the role of being a "participant as observer", the researcher will participate in the participant-group's activities but the participants are aware of the role of the researcher. If the researcher assumes the role of an "observer as participant", the researcher will most unlikely participate in the group's activities (Begum 2015; Kumar, 2011; Lodico, *et al.* 2010).

My role during field observations was that of a complete non-participant. I chose this form of observation because it allowed me to observe the extent to which EE is implemented at the chosen sites. Being a complete observer also enabled me to observe all the possible enabling and constraining factors related to the implementation of EE, without the need to offer advice or interact with the daily activities at those very sites (Lodico, *et al.* 2010). In addition, descriptive field notes were used as an observation tool during data collection to control for observer bias (Lodico, *et al.* 2010). The physical environments of the different school campuses that I visited were observed to check whether the schools' physical environment in itself was a constraining or enabling factor for EE implementation. Details of the observation tool employed in this study may be found in Appendix B.

#### **4.4.3 Document analysis**

McMillan and Schumacher (2010:420) define the term 'document' in academic terminology as "a record of past events". In addition, McMillan and Schumacher (2010:361) have classified these documents into three categories. Firstly, there are personal documents such as diaries and letters. Secondly, there are official documents such as policy statements and statistical data. Thirdly, there are objects and symbols that suggest social meanings and values. Such records may be prepared to serve some practical purpose. Muslim schools adhere primarily to the norms and principles of Islam. The Qur'aan and Prophetic Traditions are the two main sources of Islamic jurisprudence. Therefore, it was necessary for me to analyse the source documents of

Islam to examine their content in relation to the norms and ethics for environmental care.

Another aspect that was important to investigate in this study was the manner in which the national curriculum policy statement, which currently is the Curriculum Assessment Policy Statement (CAPS) addresses EE implementation in South African schools. To do this, an analysis the CAPS document was necessary. In Chapter 2, the brief history of the CAPS document as well as its general and specific aims was discussed. In the following section the focus will chiefly be on the manner in which data was analysed during the investigation.

#### **4.5 Data analysis**

McMillan and Schumacher (2010:323) and Lodico, *et al.* (2010:313) argue that a qualitative study may be regarded as similar to a quantitative study in a sense that both require specific procedural steps that need to be carried out by the researcher once the data has been collected. One of those steps includes data analysis. According to Lodico, *et al.* (2010), data analysis can follow particular steps. Firstly the researcher needs to prepare and organize the data. There are many ways in which data can be organised. These might include data organisation according to the site or according to chronological order. Data may also be prepared according to the individuals or according to the different groups under examination. Next, the researcher conducts an “initial review” and also explores the data. During this step, a general overview is obtained from the current data that was collected. The researcher also decides whether or not sufficient data was collected. (Lodico, *et al.*, 2010). If the collected data is not enough, the researcher would likely have to re-enter the field to collect sufficient data.

In this study, a thematic analysis of data as suggested by Vaismoradi, Turunen and Bondas (2013:400) was carried out. Vaismoradi, *et al.* (*ibid*) consider thematic analysis as the identification and search for a “common thread across interviews or a set of interviews”. The thematic analysis of data was preceded by the transcribing of audio field notes, then the coding of individual segments of data and organising those into categories. The categories were then grouped into themes. An example was the division of all the enabling factors of EE implementation into a separate theme from that

of the constraining factors, each with particular categories. In the next section, the focus is with regard to the manner in which rigour was achieved in this study.

## **4.6 Rigour in the study**

Ryan-Nicholls and Will (2009:70) define trustworthiness or rigour of any study as the utilisation of those logical processes that are accepted and shared by scholars of the same field. These processes are employed when a researcher wishes to show that the theories and explanations related to the study have been agreed upon by the aforesaid scholars. In quantitative research, rigour is addressed by explaining the reliability and validity measures in a research process (Krefting, 1991:214). In addition, Miyata and Kai (2009:67) regard validity to refer to how true the research findings are as well as how well the study measures the phenomenon it was designed to measure. Krefting (1991:214) also explains that often the different terms used in research methodology such as 'reliability', 'validity' and 'external validity', relate mostly to a quantitative study and not that much to a qualitative study. To indicate that the research is trustworthy, qualitative researchers need to detail procedures that were followed to establish transferability, confirmability, credibility and dependability during the research process (Lincoln & Guba, 1985; Houghton, Casey, Shaw, & Murphy, 2013:12; Loh, 2013:05). These concepts are discussed in this section in relation to how they were attended to in this study.

### **4.6.1 Credibility**

The term 'truth value' is also sometimes used interchangeably with the term credibility (Ryan-Nicholls & Will, 2009:74). According to Denzin and Lincoln (2009:149), credibility refers to the internal validity of the study (see also Lincoln & Guba, 1985; Loh, 2013:05). McMillan and Schumacher (2010:102) define credibility as the truthfulness of the results of any study. Zhang and Wildemuth (2009:06) maintain that when qualitative researchers, in addition to designing good data collection strategies, also begin to plan transparent steps for data coding and deriving conclusions from this unadulterated information, the credibility of such a study will begin to be consolidated. Tracy (2010:840) has also identified some criteria to ensure credibility of an investigation. According to Tracy (2010), when descriptions are elaborate with solid detailed accounts,

the study is said to be credible. A credible study will also seek to present data rather merely inform about data.

Furthermore Lincoln and Guba (1985) and Loh (2013) suggest seven different techniques to achieve credibility in any study. These are prolonged engagement of the researcher in the field; persistent field observation of the researcher; triangulation between sources, methods and investigators; peer debriefing; negative case analysis; referential adequacy (archiving of data) and member checks. McMillan and Schumacher (2010:379) define triangulation as the “convergence of findings” of researchers when they search for the recurring patterns in data sources, data collection strategies, time periods and theoretical schemes during cross-validation. For example, official documents could be cross-checked with informant interviews and field notes. Raufelder, Jagenow, Hoferichter and Wilkinson (2012:628) describe triangulation as a verification process of any study. In this process, the aim is to prove that other “independent measures” of the study do not display contradictory results. Although the engagement in each of the research site was about four hours, the inclusion of more than one research site in this study was regarded as sufficient to provide the consequences of prolonged engagement in the field as suggested by literature. Most importantly, it was possible to observe the surroundings of each site and reflect comparatively on the observations between different sites. In addition to this, more than one participant from each site was included. Moreover, these participants teach different subjects within each school and some of these participants hold different positions within the management structures of these schools. Also, triangulation was made possible by the use of three different data sources (namely; interviews, observation and document analysis). In this way, the possible biases were limited.

Reilly (2013:01) maintains that qualitative researchers often depend on member checking by allowing the participants in the study to correct errors and to assess the outcomes of the study. The aim of member checking is to “establish veracity” and credibility. Participant may also challenge an interpretation made during the member checking process. McMillan and Schumacher (2010:331) define member checking as “verification by participants”. Furthermore, McMillan and Schumacher (2010:331) opine



that topics may be rephrased during member checks. Therefore, member checking was followed during this study. After transcribing each interview, the transcript was also sent to the particular participant to verify whether the interview was transcribed correctly.

#### **4.6.2 Transferability**

Lincoln and Guba (1985) and Loh (2013) maintain that transferability refers to the external validity of a study. Such external validity pertains to whether or not the results of a study may be transferred to another context while still preserving its intended meanings (see also Houghton, *et al.*, 2013:13). This is mostly achieved through “thick descriptions” of the original context of the study in order to make informed decisions (Houghton, *et al.*, 2013:16; Lincoln & Guba 1985; Loh, 2013). Therefore, it is the responsibility of the researcher to provide an elaborate description of the study (Lincoln & Guba, 1985). In this way, readers may be able to transfer these results to their specific contexts. Transferability is achieved when researchers employ raw data, direct quotations and excerpts from field-notes to illustrate how themes develop from these notes (Houghton, *et al.*, 2013). In this study, a detailed description of the Muslim school context as well as the implementation of EE in these schools is presented in the next chapter. This presentation will allow readers (especially teachers who wish to implement EE in their schools) to make informed decisions on the ways in which EE may be implemented in their schools. In Chapter 5, raw data and direct quotations from the interviews conducted with the participants are provided.

#### **4.6.3 Dependability**

Houghton, *et al.* (2013:13) describes dependability as to the degree of stability of data. Furthermore, Miyata and Kai (2009:67) state that if the concept and the methodology that is used in any study, are both considered to be unstable, dependability is utilised as an evaluation mechanism. Therefore, dependability focuses on how reliable the research is (Houghton, *et al.*, 2013:13; Lincoln & Guba, 1985; Loh, 2013). Among the techniques used to achieve dependability in a study, Lincoln and Guba (2015:317) suggest a dependability audit. The methods that were used to collect data for this study, as well as concept clarification were presented in details. In addition, data from the interviews were audio taped and then transcribed verbatim. These transcriptions were

printed out and thus stored mechanically and electronically. In addition, data from these transcripts were evaluated against field notes and documents (Qur'aan, Prophetic Traditions and the CAPS document) to ensure dependability.

#### **4.6.4 Confirmability**

Confirmability is closely related to dependability (Houghton, *et al.* 2013:13) and therefore refers to the neutrality (Miyata & Kai, 2009:67) and accuracy of data. Therefore, Lincoln and Guba (1985:318) refer to the objectivity of the study when describing its confirmability. According to Miyata and Kai (2009:67), confirmability relates to those situations when qualitative researchers are, on occasion, required to maintain cordial, direct, emotional involvement with the participants. Therefore, researchers need to control the effects of their observations when considering their findings and describing the processes that were involved in the study. Such researchers need to confirm that the results of the study under examination are fully based on the raw information that was collected and not on anything else (Miyata & Kai, 2009). In this study, confirmability was attained when participants verified and confirmed that the recorded transcripts were a true reflection of the interviews. In addition, the direct quotations from participants are presented as much as possible in the presentation of findings. Ethical considerations form an integral part of all research activity. In the following section, the ethical aspects that required consideration before and while carrying out this study are discussed.

#### **4.7 Ethical measures**

McMillan and Schumacher (2010:15) maintain that since educational research is focused mainly on people, researchers in this field are ethically responsible to protect the rights of the participants (people) of the study. Research is also regarded as credible when it adheres to research ethics (McMillan & Schumacher, 2010:338). In addition, they identify four factors that ought to be addressed by researchers to ensure that their research was conducted in an ethical manner (McMillan & Schumacher, 2010:339). These include, firstly, that the researcher obtain an informed consent from the participant. Secondly, assurances by the researcher of the confidentiality and

anonymity of participants' personal accounts and details as well the anonymity of the context (site) of the study. Thirdly, the right of the participant to privacy and fourth, encouraging a sense of caring and fairness by having open discussions with participants.

As stated in Chapter 1, for this study, ethical clearance was first sought from Unisa College of Education Research Ethics Committee (CEDU REC). It is only after such clearance was obtained that data collection commenced. Secondly, since Muslim schools are registered as independent schools within their provincial departments, no permission to enter their sites was required from the Gauteng Department of Education. However, the School Governing Bodies (SGB) of the relevant schools had to be approached so as to seek permission to enter their school campuses and to use these campuses as research sites. Permission from the respective principals to conduct research in the sites was requested. Thereafter, teachers were also requested to participate in the study. Each participant was requested to sign a declaration of informed consent, and was given the option to withdraw from participating at any time during the research process. They were assured of anonymity and confidentiality throughout the research process and in the final reports. Participation in this study was completely voluntary. With the consent of participants, interviews were recorded. Each school was also given a pseudonym during the data analysis phase in order to protect the schools' and participants' identities and to enhance confidentiality.

#### **4.8 Reflections on the research process**

Berger (2013:01) maintains that reflexivity is considered as an important strategy for knowledge generation in qualitative research. McMillan and Schumacher (2010:332) define reflexivity as a "rigorous self-examination" of the "personal and theoretical commitments" of the researcher during the research process. Furthermore, Houghton, *et al.* (2013:15) regard the researcher's reflections on the decisions taken and the implementation of procedures during the research process as means to enhance the credibility of the study. Therefore, in this section, a reflection upon my experiences during the research process is presented commencing with the literature review process, thereafter proceeding to the data collection and data analysis processes.

#### **4.8.1 Accessing literature related to the study**

As a novice to academic research, I found the process of finding literature both challenging and interesting. The main challenge was to find recent literature related to my study. The Muslim school context is fairly recent (Mohamed, 2012:219), and as such there was not much literature, both online and in the library, available related to this context. However, I persisted by trying to contact other Muslim researchers and professors, requesting their assistance and guidance. My perseverance was rewarded when I contacted a South African researcher via e-mail who, incidentally, had also recently completed a doctoral degree in Islamic Environmentalism. Her research provided many directions for accessing literature related to this study. These directions included topics such as Islamic perspectives on EE, ecology and ecological ethics. My supervisor also guided me by suggesting ways to access recent literature related to this study.

#### **4.8.2 Accessing sites for interviewing and field observations**

Gaining ethical clearance and access to the research sites was fairly easy. Muslim schools are privately-managed (Fataar 2003:01); hence there was no need to contact the Gauteng Department of Education to gain permission to access the sites. However, there was a need to contact the School Governing Boards (SGB) and school principals requesting permission to use their schools as field observation sites. In addition, permission was also sought to interview the selected teacher-participants employed at their schools. All the SGBs and principals were very accommodating and I was afforded the opportunity to interview the participants and observe the sites without any hindrances from the School Management Teams (SMT).

The only challenge during the data collection phase was to find a suitable time to interview the participants. Most participants were not prepared to be interviewed after school hours. Being a fulltime teacher myself, I had to negotiate a common time between my own schedule and that of the participants for interviewing. I also had to request permission from my principal prior to proceeding for the interviews. Fortunately, the principal of the school wherein I teach was very understanding in this regard and always acceded to my requests. The background of the researcher will influence the

manner in which data collection was conducted (Crowe, Cresswell, Robertson, Huby, Avery & Sheikh 2011; Mizock, Harkins & Morant, 2011). Being a Muslim teacher in a Muslim school, it was easy for me to gain permission to access the research sites during data collection. The teachers that I interviewed at all the schools were also very friendly and willing to share their experiences with me.

#### **4.8.3 Challenges during the interviewing process**

Another challenge was the interviewing process itself. Being a novice, I had yet to gain experience in interviewing skills such as probing. Being attentive to participant responses was also important during the interviews (McMillan & Schumacher 2010:360). On some occasions, questions had to be repeated since some of the participants did not understand the questions. With guidance from my supervisor and after approximately three or four interviews, such skills were slowly developed. The interview schedule that was designed under the tutelage of my supervisor also proved to be useful during the interviews. This schedule enabled me to sharpen my interviewing skills. Some interviews also had to be, on occasions, temporarily halted due to minor interruptions that required the participants' attention. For example, one participant was a Head of Department (HOD) and thus was required to attend minor clerical duties during the interview.

#### **4.8.4 Challenges during the data analysis process**

The verbatim transcription of the audio-taped interviews was very time consuming. For example, an interview that was approximately an hour long took at least three to six hours to transcribe (McMillan & Schumacher, 2010:360). The raw data from the transcripts had to be thereafter refined from unnecessary figures of speech in order to search for actual and intended meanings in the participants' responses. This process, according to McMillan and Schumacher (2010), is a crucial time for "reflection and elaboration" by the researcher in establishing quality and valid data.

Categorising the data into themes (thematic analysis) was also an aspect of the data analysis process that I found challenging. Vaismoradi, *et al.* (2013:400) regard the thematic analysis of data as an independent qualitative method for "identifying,

analysing and reporting patterns” or themes within data. Initially, it was difficult for me to recognise patterns and themes from data. However, as more audio-field recordings were being transcribed, patterns (themes) in participant responses began to emerge. The feedback I received from my supervisor also assisted me in this regard.

#### **4.8.5 Academic writing skills as a novice researcher**

As a novice researcher, I acquired crucial writing skills related to academic literature. These skills were acquired under the mentorship of my supervisor. Hence I learnt how to cite and reference authors correctly, how to employ academically correct concepts and grammar while writing and how to quote correctly. I also learnt how to paraphrase texts found in literature and present data in an academically-acceptable manner.

### **4.9 SUMMARY**

In this chapter, the methodology that was used for this study was discussed. The research paradigm, being interpretivism, together with the ontological and epistemological assumptions underlying this study, were presented. Also perused was the research approach which was the qualitative research. The research design employed in the study, which was the descriptive case study, was also outlined. The main sampling technique, purposive sampling was also dealt with in this chapter.

Thereafter, the primary data collection method employed in this study, that being, semi-structured, face-to-face interviews, was discussed. Observation and document analysis as the secondary data collection methods used in this study were also explained. A discussion on the issues of trustworthiness and ethical measures related to my study ensued thereafter. Finally, this chapter concluded with a reflection on the research process of this study. The next chapter discusses the presentation of the data collected during this investigation.

## **CHAPTER 5: RESEARCH FINDINGS**

### **5.1 INTRODUCTION**

This study investigated the experiences of teachers about the implementation of EE in Muslim schools in Gauteng. The purpose of this study was to establish the enabling and constraining factors towards the implementation of EE in the Muslim schools as mandated by the National Curriculum Statement (NCS) in the Curriculum Assessment Policy Statement (CAPS) and as a component of Islamic values as stipulated in the Qur'aan. In Chapter 1, I positioned myself as a Life Sciences and Islamic Sciences teacher and indicated that due to the content and practice of these subjects, the issue of the implementation of EE attracted my attention.

The literature reviewed in Chapter 2 in relation to this study elicited various theories from which the conceptual framework of the study was drawn. Consequently, the various concepts were elucidated and discussed in detail in Chapter 2. The study adopted a qualitative research approach. Data were collected through semi-structured interviews, field observations and document analysis. Semi-structured interviews were conducted with three teacher participants in each of the five Muslim Schools that were purposefully and conveniently selected, (see Chapter 4, section 4.3). Thus, a total of 15 teachers were interviewed.

In this chapter, I first present a brief contextual description of the five Muslim school campuses from which data for this study was collected. For ethical reasons, all the names of the schools and the participants are pseudonyms and do not in any way reflect their real names. Thereafter, the findings from data are presented in themes that were developed from the analysis of data. These themes include:

- The conceptualisation of the term 'environment' by Muslim school teachers;
- The conceptualisation of EE by Muslim school teachers;
- Experiences and perceptions of teachers regarding the implementation of EE in Muslim schools;
- Teacher perspectives on EE integration;

- Physical space and EE in Muslim school; and
- Community-based EE initiatives.

## **5.2 FIELD OBSERVATIONS OF SITES**

### **5.2.1 Out-door physical environment of sites**

My observations of the five campuses were that the general standards of maintenance of the school surroundings were impressive. The ablution blocks were well maintained. One of the first aspects that were noticed at most of the Muslim schools that were visited, was the abundance of trees, with many different shrubs and plant species in the school yard and along the corridors. These plants invariably attract many insects and birds. One of the schools had a vegetable patch. At most of the sites, the natural aspects of the bio-physical environment (such as trees) complemented its man-made aspects (such as the buildings).

Some of the schools had solar water heating panels placed on their roof tops, which is an indication that these schools value and welcome the concept of energy conservation. However, most schools had no recycling bins for managing their waste paper, cans and plastics. In my opinion, the absence of recycling bins at any school is unfortunate because the mere presence of such facilities is a form of a reminder and encouragement for the learners and teachers about the importance of responsible waste disposal at the school. The presence of recycling bins at schools also inadvertently sends out a message to people visiting the school that the school regards environmental care as a significant issue. Table 5.2.1 below presents field notes developed during the process of observation of the out-door bio-physical environments in the five schools that were visited.



Table 5.2.1 Observations of the out-door physical environment of sites

| <b>A) OUT-DOOR PHYSICAL ENVIRONMENT OF THE SITE:</b>   | <b>School A: Cahira Islamia</b>  | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>   | <b>School E: Pasha Mahmud Turki</b>  |
|--|--|--|--|--|--|
| Describe the maintenance of the sites physical environment in terms of cleanliness and physical appearance                                     | Neat and tidy. Horticulture well maintained  | Neat and tidy. Horticulture well maintained  | Neat and tidy. Horticulture well maintained  | Some Litter noticed on the playground area   | Litter noticed along some corridors  |
| Is there evidence of environmental care in the form of litter/waste management at the site?  | There are visible litter bins  | There are visible litter bins  | There are visible litter bins  | There are visible litter bins  | There are visible litter bins  |
| Does the site have a garden/vegetable patch?   | Garden only. No Vegetable Patch  | Garden only. No Vegetable Patch  | Both present; Indigenous trees were planted on Arbour Day                                    | No garden. No vegetable patch  | Garden only. No Vegetable Patch  |
| Does the site make provision for the recycling of glass, paper, metals etcetera?   | Recycling bins were not visible  | There are visible recycling bins   | There are visible recycling bins   | Recycling bins were not visible  | Recycling bins were not visible  |
| Is there adequate physical space on the site to accommodate for activities related to EE such as Arbour Day?                                   | Physical space is inadequate for EE related activities                                       | Physical space is adequate for EE related activities   | Physical space is inadequate for EE related activities                                       | Physical space is inadequate for EE related activities                                       | Physical space is inadequate for EE related activities                             |
| Does the site support energy conservation by using energy-efficient products such as energy-saving globes, solar powered geysers?              | Solar powered geysers and energy saving globes were visible                                  | Only energy-saving globes were visible   | Solar powered panels and energy-saving globes were visible                                   | Only energy-saving globes were visible   | Only energy-saving globes were visible   |
| Do the natural aspects of the bio-physical environment (such as plants) found at the site complement its man-made aspects (such as buildings)? | Abundance of trees and shrubs were visible. These plants blend in with the built environment | Abundance of trees and shrubs were visible. These plants blend in with the built environment | Abundance of trees and shrubs were visible. These plants blend in with the built environment | Abundance of trees and shrubs were visible. These plants blend in with the built environment | The site is mainly tiled and paved and cannot support plant life adequately        |
| Is there evidence of activities related to EE such as environmental projects/ environmental information on notice boards found at the site?    | Evidence of an environmental notice board or environmental projects is not visible           | Evidence of an environmental notice board or environmental projects is not visible           | Evidence of an environmental notice board or environmental projects is visible               | Evidence of an environmental notice board or environmental projects is not visible           | Evidence of an environmental notice board or environmental projects is not visible |

| <b>A) OUT-DOOR PHYSICAL ENVIRONMENT OF THE SITE</b>                             | <b>School A: Cahira Islamia</b>  | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>  | <b>School E: Pasha Mahmud Turki</b>  |
|---|--|--|--|---|--|
| Does the physical nature of the site allow for the facilitation of field-trips? | The physical nature of the site is chiefly man-made and does not allow for field-trips | The physical nature of the site is chiefly man-made and does not allow for field-trips | The physical nature of the site is chiefly man-made and does not allow for field-trips | The school is situated on hilly terrain that has a veld adjacent to it. | The physical nature of the site is chiefly man-made and does not allow for field-trips |

### 5.2.2 Classroom environment of sites

Most of the classrooms visited were neat and tidy. Desks were arranged in an orderly manner. There was barely any litter strewn around in most of the classes. Some of the classes had charts related to environmental care displayed on their walls. Apart from the chairs that were made from plastic, which is recyclable, the desks at all the sites, were made from wood and steel. All the sites visited used energy-saving globes for their lighting. There were evidences of the promotion of Islamic environmental ethics found within most of the classrooms that were visited in the form of posters related to EE. For example, Cahira Islamia had Islamic proverbs on posters that encouraged the conservation of water and kindness to animals in many classrooms. Below is a summary of the classroom environments observed at the five schools that were visited.

Table 5.2.2: Analysis of the classroom environment of the sites

| <b>B) CLASSROOM ENVIRONMENTS OF THE SITE:</b>  | <b>School A: Cahira Islamia</b>  | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>  | <b>School E: Pasha Mahmud Turki</b>   |
|--|--|--|--|---|---|
| Describe the physical appearance/maintenance of the classrooms in terms of tidiness  | Classrooms appeared to be neat and tidy  | Classrooms appeared to be neat and tidy  | Classrooms appeared to be neat and tidy  | Classrooms appeared to be neat and tidy   | Some classes had bins overflowing with litter   |
| Is the furniture used in the classrooms made from recyclable material?   | Not all the classroom furniture made from recyclable material- only plastic chairs were visible              | Not all the classroom furniture made from recyclable material- only plastic chairs were visible              | Not all the classroom furniture made from recyclable material- only plastic chairs were visible              | Not all the classroom furniture made from recyclable material- only plastic chairs were visible | Not all the classroom furniture made from recyclable material- only plastic chairs were visible       |
| <b>B) CLASSROOM ENVIRONMENTS OF THE SITE:</b>  | <b>School A: Cahira Islamia</b>  | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>  | <b>School E: Pasha Mahmud Turki</b>   |
| Are there energy-saving globes used in the classrooms?   | Energy-saving globes were visible  | Energy-saving globes were visible  | Energy-saving globes were visible  | Energy-saving globes were visible   | Energy-saving globes were visible   |
| Are there any posters related to EE displayed in classroom notice boards/walls?  | In some classrooms posters related to EE were visible  | In some classrooms posters related to EE were visible  | In some classrooms posters related to EE were visible  | No posters related to EE were visible in classrooms visited                                     | No posters related to EE were visible in classrooms visited   |
| Does the classroom atmosphere promote a general sense of environmental care by having pot-plants, fish tanks, books related to EE? | Only books and posters related to EE were visible in some classrooms   | Pot-plants, and EE related books were visible in some classrooms   | Pot-plants, and EE related books were visible in some classrooms   | Only books and posters related to EE were visible in some classrooms                            | Classrooms do not create a general sense environmental care as no resources related to EE was visible |
| Are there evidences of the promotion of Islamic environmental ethics found within the classroom?                                   | Classrooms displayed posters having Islamic proverbs that encouraged water conservation and care for animals | Classrooms displayed posters having Islamic proverbs that encouraged water conservation and care for animals | Classrooms displayed posters having Islamic proverbs that encouraged water conservation and care for animals | No evidence of the promotion of Islamic environmental ethics visible in classrooms              | No evidence of the promotion of Islamic environmental ethics visible in classrooms                    |

### 5.2.3 Policies at the sites

Very few sites were found to be holistically supportive of EE and environmental ethics in terms of their policies such as the schools' code of conduct. However, these policies were found to promote Islamic environmental ethics to a certain extent. For example, evidences such as posters that had Prophetic quotations encouraging cleanliness and discouraging the wastage of water were found at the ablution block of Cahira Islamia. The table below illustrates the policies observed at the sites in terms of EE and environmental ethics.

*Table 5.2.3: Analysis of the policies observed at the sites*

| <b>C) POLICIES AT THE SITE</b>  | <b>School A: Cahira Islamia</b>   | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>   | <b>School E: Pasha Mahmud Turki</b>  |
|---|---|--|--|--|--|
| Does the site support EE and environmental ethics in terms of its policies such as its Code of Conduct? | School policies support EE as far as the prevention of litter is concerned  | School policies support EE as far as the prevention and recycling of litter is concerned | School policies support EE as far as the prevention and recycling of litter is concerned | School policies support EE as far as the prevention of litter is concerned           | Environmental ethics are not evident in school policies                              |
| Does the site promote Islamic environmental ethics within these policies?                               | Islamic environmental ethics such as cleanliness (taharah) enshrined within policies  | Islamic environmental ethics such as cleanliness (taharah) enshrined within policies     | Islamic environmental ethics such as cleanliness (taharah) enshrined within policies     | Islamic environmental ethics such as cleanliness (taharah) enshrined within policies | Islamic environmental ethics such as cleanliness (taharah) enshrined within policies |
| Are there any evidences found on the site that illustrates this promotion?                              | A few posters were found on site that contained Islamic proverbs emphasizing the importance of water conservation and cleanliness | No evidences were visible  | No evidences were visible  | No evidences were visible  | No evidences were visible  |

#### **5.2.4 Extra-curricular activities at the sites**

Some of the sites had little physical space to accommodate for activities related to EE such as Arbour Day. There was also little evidence of activities related to EE such as environmental projects and environmental information on notice boards found at these sites. The physical nature of only one site, Allamah Aaloosi school, did allow for the facilitation of field-trips. One of the sites visited, Allamah Ghaamidi School, had a functional eco-club. This club organized regular clean-up campaigns, field-trips and Arbour Day activities. Another school that was visited embarked on community-based projects and charity-drives related to poverty alleviation. Yet another school has a Scouts' club that organized out-door field-trips for its learners. A summary of the extra-curricular activities is presented in the table appearing hereunder.

Table 5.2.4: Analysis of the extra-curricular activities related to EE observed at the sites.

| <b>D) EXTRA-CURRICULAR ACTIVITIES AT THE SITE:</b>   | <b>School A: Cahira Islamia</b>  | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>   | <b>School E: Pasha Mahmud Turki</b>  |
|--|--|--|--|--|--|
| Is there evidence of the support for EE related extra-curricular activities found on the site? | No evidence found for the support of EE related, extra - curricular activities visible on the site                       | Recycling bins were visible on the site  | Indigenous trees planted on Arbour day; Recycling Bins; Vegetable patch were visible on the site   | No evidence found for the support of EE related, extra - curricular activities visible on the site                       | No evidence found for the support of EE related, extra - curricular activities visible on the site                       |
| Describe some of these extra-curricular activities showing their relationships to EE.          | Not applicable as no evidence found for the support of EE related, extra - curricular activities was visible on the site | Learners are encouraged to dispose of their recyclable waste in a responsible manner | Learners are taught to dispose of their recyclable waste in a responsible manner; Learners are made aware of the importance of planting indigenous trees on Arbour day; Learners are familiarized with the aspects of sustainability | Not applicable as no evidence found for the support of EE related, extra - curricular activities was visible on the site | Not applicable as no evidence found for the support of EE related, extra - curricular activities was visible on the site |
| Does the site have an eco-club?  | No   | No- but they do have a Scouts' club  | Yes  | No   | No   |
| Is this club functional?   | No   | Yes  | Yes  | No   | No   |
| <b>D) EXTRA-CURRICULAR ACTIVITIES AT THE SITE:</b>   | <b>School A: Cahira Islamia</b>  | <b>School B: Topkapi Muslim</b>  | <b>School C: Allamah Ghaamidi</b>  | <b>School D: Allamah Aaloosi</b>   | <b>School E: Pasha Mahmud Turki</b>  |
| Describe the role that the eco-club has assumed to facilitate EE within and beyond the site.   | Not applicable   | The Scouts' club organizes field-trips and camps into the                            | The Eco-club organizes regular clean-up campaigns both within and around the school  | Not applicable   | Not applicable   |

|  |  |                             |  |  |  |
|--|--|-----------------------------|--|--|--|
|  |  | outdoor natural environment | campus; they also organize special guests like university professors to address the learners on Arbour Day; Parents are also invited to plant trees with their learners on Arbour Day; the club also organizes field-trips to enviro-sensitive locations like the wetlands and rainforests |  |  |
|--|--|-----------------------------|--|--|--|

In the next section, a definition of the term ‘environment’ as coined by the participants is presented.

### **5.3 ‘ENVIRONMENT’ AS CONCEPTUALISED BY TEACHERS IN MUSLIM SCHOOLS**

In Chapter 2 of this study, the discussion indicated different ways in which the term ‘environment’ is conceptualised in literature. As such, the assumption was that participating teachers in this study may also have different perspectives about what is meant by the concept ‘environment’. This assumption was also strengthened by the fact that two documents reviewed in this study, the Qur’aan and the CAPS are both indifferent towards offering a clear definition of the environment. Yet these are the two documents that were assumed in this study to be capable of providing guidance to teachers on the understanding of the environment and consequently, the implementation of EE in the Muslim schools. The assumption was that it would be difficult for teachers to implement EE unless they have a comprehensive understanding of what the environment is. Upon the analysis of interviews with participants, two main categories of the conceptualisation of environment emerged, namely; environment as a biophysical concept and environment as multidimensional.

#### **5.3.1 Environment in a biophysical dimension**

The most dominant way in which the environment was defined by participants in this study indicated an understanding of a bio-physical dimension. This understanding was

evidenced by the use of concepts such as natural environment, living and non-organisms to mention but a few. For example, Mr Shadwell, a Life Sciences teacher at Cahira Islamia, described environment as the “natural conditions” that surrounds a person. Also, Mrs Samia, a Natural Sciences teacher at Cahira Islamia, described the environment as “our surroundings”. Although this description of the environment as our surroundings might mean anything from natural to social and political environment, the impression drawn from the respondent was that the surroundings were the natural environment. More directly to the biophysical dimension, the environment was described as anything that is of interest to humans including the non-living and the living material; or even the harmonious interaction of the four bio-physical spheres, namely; the hydrosphere, the lithosphere, the atmosphere and the biosphere as described by Mr Sono, a Natural Sciences teacher at Topkapi Muslim School. Table 5.3.1 below is a summary of the opinions of the participants regarding the definition of the term ‘bio-physical environment’.

*Table 5.3.1: Opinions of participants’ regarding the term ‘environment’.*

| <b>Teacher</b> | <b>Opinion regarding what the term ‘environment’ means</b>   |
|----------------|--|
| <b>1</b>       | The natural conditions that surrounds a person   |
| <b>2</b>       | Everything you see around you....  |
| <b>3</b>       | It’s your surroundings..... it’s your physical environment.... everything that Allah created   |
| <b>4</b>       | Everything that’s around us....how it affects us...how it affects our living...how it affects our attitudes  |
| <b>5</b>       | Whatever you work is the environment...the country as such and then eventually the world...but my environment would be the home or where I work...the surroundings |
| <b>6</b>       | The area in which the children are going to be found in the school itself, the playground, things like that...   |
| <b>7</b>       | The area where we live, whether it’s at school or at home, everything around us  |
| <b>8</b>       | Anything that surrounds us or that surrounds the school or anything that is of interest, both the non-living and the living material                               |
| <b>9</b>       | What you make up for a child, it’s a playground that where they play   |
| <b>10</b>      | What surrounds us, the trees, the buildings, basically everything around us.   |
| <b>11</b>      | Our surrounding areas whether it’s the school, home or out in the veld or perhaps in town... whether it’s physical or natural                                      |
| <b>12</b>      | Environment is surrounding. The area [that] you [are] in, it’s your home environment or it’s school-based environment.   |
| <b>13</b>      | Looking at the spheres in science, we always teach the learners about the four spheres: the  |



|    |  |
|----|--|
|    | hydrosphere, the atmosphere, lithosphere as well as the biosphere...so my understanding of the environment [would be] these four spheres living in harmony with each other.  |
| 14 | There's the physical environment, although I believe there are other environments within which a child needs to be surrounded [like an] emotionally stable environment. In terms of the school, the exact area space within which the child finds him or herself in the class and then [also] out of the class |
| 15 | The surroundings we live in, environment is a very name for our whole surroundings that makes our mood that makes our progress or will retard our progress   |

The table above suggests that most teachers equated the term 'environment' with terms such as "surroundings" or "space". Teachers therefore regarded the term 'environment' as a physical space that people are surrounded by. It was also in the interest of this study to investigate the perceptions of teachers regarding the multi-dimensionality of the term 'environment'. The following subsection discusses these perceptions.

### 5.3.2 The multi-dimensional environment

It was interesting to find that some descriptions of the environment revealed the conceptualisation of its multidimensionality as suggested in literature (See Chapter 2:2.5). Mr Mukhtar, the Head of the Islamic Sciences Department at the Allamah Ghaamidi School, referred to the 'environment' as, "Any space, anything that affects the well-being or the opposite of the well-being of a learner". Notably, 'anything' in this regard implied not only the biophysical environment but other dimensions of the environment as well. Such multidimensionality of the environment was also revealed by Mr Mukhtar who stated that there are "other environments within which a child needs to be surrounded". He specifically mentioned that "emotionally stable environment" was important for the holistic development of learners. Because emotions are experienced by people, this observation implicitly indicated the conceptualisation of the social dimension of the environment. It can also imply the need to include the emotional dimension in the description of the dimensions of the environment. For example, Mr Tariq, a Social Sciences teacher at Topkapi Muslim School, described the environment as "what either makes us happy or sad". Therefore, this is an emotional dimension of the environment. Such a surrounding (where people are either happy or sad) will

therefore either ensure human progress or the retardation of human progress. Below is a summary of the opinions expressed by the participants regarding the multi-dimensionality of the term 'environment'.

*Table 5.3.2: Opinions of participants' regarding the multi-dimensionality of the term 'environment'*

| <b>Teacher</b> | <b>Opinion regarding the multi-dimensionality of the term 'environment'</b>   |
|----------------|---|
| 1              | [Your] immediate surroundings   |
| 2              | Everything that you surrounded [by]   |
| 3              | What happens around you, the dynamics of the class[room] but then at the same time it's your physical environment   |
| 4              | It's [the environment] obviously associated to everything around us...so it's not just inclined to my classroom, it's to the greater society and what the children have to experience.... not only in the classroom but once they leave my classroom what they are faced with [beyond the classroom]  |
| 5              | Speaking on a broader term then the whole [world]...whatever [wherever] you work is the environment...the country as such and then eventually the world.  |
| 6              | We can also talk about physical environment, whether it be in a physical environment outside doing work with them or it could also be the environment that we portray in another sense.   |
| 7              | It [the term environment] is basically both the natural environment and the one that we built up.   |
| 8              | Nowadays when we look at the [term] environment we may look at what we refer to as the artificial environment, which means that [environment] which is built by man and the natural environment. Taking into consideration that the man-made environment is the one that is ever-increasing and on the other side the natural environment is being degraded and is also decreasing in size. |
| 9              | My understanding is that environment is that it should be what you make up for a child, what you make up for a child's education  |
| 10             | I would explain [to the learners that] the built environment as [being] the man-made structures. The buildings in this school form part of the built environment of this school. Then the natural environment will consist of stuff like trees, the geographical aspects like land-forms and things like that, [for example] the ecosystem that's maybe the natural environment.            |
| 11             | It covers a wide aspect. It actually reflects what's outside beyond your house or school.   |
| 12             | The outside environment would be obviously nature. [It] wouldn't be classroom or home and outside would be trees, nature.   |
| 13             | Well it's [the built environment is] not part of the natural environment, this [built environment] is all man-made.   |
| 14             | I think environment would mean any space. [Environment is] anything [space] that affects the well-being or the opposite of well-being of a learner.   |
| 15             | Environment is the surroundings we live in. The type of nature that surrounds us, the vegetation, whether it is the atmosphere, whether it is the type of weather conditions and whether it is the type of seasons. All that collectively I would term as environment. And that is what either makes us happy or  |

|   |
|---|
| sad. Environment does affect every individual creature, whether it's man or animal. |
|---|

The above table reveals that most teachers were aware that the term 'environment' is a multi-dimensional complexity that may be viewed from various angles. These dimensions include the social, emotional and bio-physical concepts related to the term 'environment'. From these descriptions of what the term 'environment' entails, the interest was then in understanding the way EE is defined by participants. In the following section, findings to this effect are presented.

#### **5.4 ENVIRONMENTAL EDUCATION AS CONCEPTUALISED BY TEACHERS IN MUSLIM SCHOOLS**

Participants had different understanding and, therefore, description of what EE entails. Most participants regarded EE as a concept related to instructing and educating learners 'about' the natural environment. Comments in this regard included:

[EE is] teaching or educating learners about the importance of their environment, the natural environment, sustainable use of natural resources, and conservation of living organisms that exist in their natural environment (Mr Shadwell).

For me EE is making children aware of what your environment is all about (Mrs Sarah).

The perception drawn from these comments is that EE is about the creation of awareness about the sustainable use and conservation of the natural environment. The implication for this perception is that other aspects of EE, namely education for and education in the environment may be ignored. However, it was found in this study that some respondents understood this education "about" the environment as something that should be done not only for applicability at school but for wider application to other contexts. For example, Mr Pondo, a Natural Sciences teacher at the Pasha Mahmud Turki School, defined EE as a process of creating "consciousness" for the preservation of a healthy environment at home, at work, in class or wherever a person might be. Mr Sono concurred with Mr Pondo, stating that EE involves the ability to educate learners as well as the grown-ups about the environment and about how humans can co-exist in

harmony with their environment. This is a promising conceptualisation which suggests that, if implemented, EE may have wider impact than only at school. Mr Sono concurred with Mr Pondo, stating that EE involves the ability to educate learners as well as the grown-ups about the environment and about how humans can co-exist in harmony with their environment.

EE is also understood as involving the development of the ability to protect and sustain the environment (Mr Pondo). The respondent argued that humankind needs to understand that they are part of the environment and by destroying the environment they are actually destroying themselves as well. This statement suggests a different dimension of the environment, namely; education for the environment. In other words, when people get educated into understanding themselves as part of the environment, they will begin to protect the environment. Furthermore, EE, according to Mr Tariq, is a means of empowering a learner in becoming conscious of the environment. In addition, it is a means of preserving the environment and promoting good in the existing natural environments so that this natural environment does not at any time suffer at the hands of some human beings. In this regard Mr Tariq stated:

[EE] is empowering [the learners] both in becoming conscious of the environment, in preserving the environment and promoting good[in the] environment and in seeing that the environment does not, at any time, suffer at the hands of this human being who is the main cause of [its] destruction.

His understanding therefore places EE's main goals within the discourse of environmental preservation and protection. In turn, this view of EE may be located within the dimension of education for the environment. There were some participants, like Mr Mukhtar, the Head of Department of Islamic Sciences at the Allamah Ghaamidi School, who felt that the approach to implementing EE cannot only be one dimensional. Most participants agreed that when implementing EE, teachers should allow learners to experience the environment practically. Mr Tariq believed that EE implementation is all about getting learners to understand that the natural environment is a vital ingredient to make the world a place worth living. Therefore, he felt that humans should guard

against creating an imbalance in the environment. Mr Tariq also felt that humans are the main cause of the destruction of the natural environment. Therefore, he stated:

And as one person very aptly said that man is the cancer of the environment, because man really eats into the environment like cancer eats into a patient.

EE implementation, according to the participants, relates to aspects of the environment which includes sustainability and conservation. It involves teaching learners to implement strategies in which they should interact with the environment to make it more sustaining (Mrs Soofia, a Natural Sciences teacher at Cahira Islamia School). Therefore, it is important that teachers be able to develop such strategies. In the following section, a discussion on the experiences and perceptions of teachers regarding EE implementation is presented.

## **5.5 EXPERIENCES AND PERCEPTIONS OF TEACHERS REGARDING THE IMPLEMENTATION OF ENVIRONMENTAL EDUCATION IN MUSLIM SCHOOLS**

There were certain factors that the study found as either enabling or constraining the implementation of EE in the participating schools. Such factors are grouped into five themes, namely; personal beliefs and values; teachers' teamwork and engagement in extra-curricular activities; the attitude of school-based management team; learners' attitudes; and the schools' value systems and environmental ethics. Religion and personal values hold a significant place in shaping an individual's approach to EE. The following section provides a description on the way in which a teacher's religious beliefs and values may constrain or enable the way in which the teacher implements EE.

### **5.5.1 The influence of the personal beliefs and values of Muslim school teachers during the implementation of Environmental Education**

In this study, I tried to elicit the personal religious beliefs and values of the participants. I also wanted to know ways in which the value-systems and beliefs of these participants influence their implementation of EE both within and beyond their classrooms. This

information was deemed important because the assumption was that the context in which the study was conducted might dictate particular belief and value systems to participants. Yet that assumption might be wrong and, even if it was right, it would not be known how such beliefs and value systems might influence the processes related to the implementation of EE. The discussion begins with the perceptions held by the Non-Muslim teachers with regard to the influence that their personal religious beliefs and values had on the manner in which they implement EE.

#### **5.5.1.1 Non-Muslim teachers' perceptions**

There were five participants who although not adherents of the Muslim faith, were employed in the Muslim participating schools. Three of these participants were followers of the Hindu-faith, while two participants were adherents of the Christian faith. Mr Pondo stated:

I follow the Christian faith and my belief is that environment was created and [that] men, the inhabitants of the environment, are tasked with taking care of it; so, it is the responsibility of those who inhabit the environment to take good care of it.

From this statement, two issues can be drawn. Firstly, the participant's beliefs about the relationship that should exist between people and the environment are associated with religion. Secondly, people have a responsibility to care for the environment regardless of their religious beliefs and values. Based on this finding, it can be suggested that generally a teacher's belief and value system may have a positive influence on the way in which the teacher implements EE.

All of the Non-Muslim participants stated that, their respective faiths all advocate responsibility and care towards the environment. This attitude, according to them, corresponds in many respects to the teachings of Islam about the care and awareness of natural environment. The teachings of Islam, according to many Non-Muslim participants, are also very much similar to their own religious values. One such example cited by a Hindu participant, Mr Sono, was the fact that Muslims as well as Hindus have

to ensure the cleanliness of the environment in which they wish to pray, prior to the performance of their prayers. Mr Sono therefore stated:

I mean our religious beliefs tell us- and it would be any religion- that you cleanse yourself first, you cleanse your surroundings, you cleanse your environment, before you actually do the prayer. When we pray... [we pray] without shoes and that is one of most religious beliefs, I mean you pray without shoes and there again you are keeping yourself [and] your environment clean.

This response relates to the aspect of environmental cleanliness and care, both of which are essential features of EE in Islam. The Qur'aan (05:07) also lays emphasis on this aspect related to EE in the following verse:

O you who believe! When you prepare for prayer, wash your faces and your hands [and arms] to the elbows; rub your heads [with water]; and [wash] your feet to the ankles.

The examples given above are regarded in this study as the religious beliefs that may possibly enable the implementation of EE in Muslim schools even though teachers are not Muslims. However, there were some issues that were cited by some of the Non-Muslim participants which were interpreted as constraining the implementation of EE in the schools. For example, Mr Pondo stated that on a few occasions, he had to consult with the Islamic Science teachers when teaching certain topics (related to EE) such as family-planning and contraception, during his Natural Sciences lessons. Hence he said:

[The grade nine learners] were learning about contraception. Now there [are] various contraceptive methods and the condom is one of them; so, I wanted to bring the pills and the condoms to show them...not to demonstrate what to use...just to show them...but I had to be stopped. So, those are some of the things.... you don't know the extent to which you can go... if you are from a different faith.

It is known that family planning has an indirect effect in reducing overpopulation and over-utilisation of environmental resources. However, the comment above suggests that

schools' religious values may constrain a teacher in making decision regarding the topics related to EE. Although the participant understood that he had to abide by the school's religious norms, there was a particular method that he had initially thought would be suitable for clarifying some EE concepts which he could not follow because of the school's religious values.

Mrs Faria also stated that in Muslim schools, the curriculum is especially designed to include Islamic subjects such as Qur'aanic Studies. This specialised structure creates time constraints that impede upon the implementation of EE in some instances. In this regard, she commented:

At Islamic schools, many of our periods are being taken away and we put Islamic subjects in there, so as it is our time you know becomes much less to teach certain topics [related to EE].

In another example, Mr Pondo was also prevented from the usage of the lungs of a pig, for conducting a scientific experiment during a Natural Sciences lesson. The usage of any organ of a pig is a prohibition in Islam as stated in Qur'aan (02:173). Mr Pondo was unaware of this fact. Hence he stated:

I wanted to perform an experiment and I had wanted to bring lungs, and the easiest I had at my disposal, were lungs of a pig, [but] I had to be stopped [by the School Management].

However, Mr Pondo attributed these incidents mentioned above, to his own lack of understanding of the Muslim faith. These incidents demonstrated a clash of his own religious beliefs and values, which would not prevent the use of such items to demonstrate social issue related to EE, with those Islamic beliefs.

Mr Pondo, on the other hand, also felt that, generally to implement EE to learners in a Muslim school is not a difficult task. When he was asked whether he felt offended by these above-mentioned incidents, Mr Pondo stated that he did not feel offended at all and viewed these incidents as learning experiences about the Muslim faith. However,



as indicated, they inhibit the teachers' freedom to teach freely according to their own belief systems.

### **5.5.1.2 Muslim teachers' perceptions**

The responses from the Muslim participants were also much similar to those expressed by the Non-Muslim participants. Most of the Muslim participants stated that they employ the Islamic principles of "cleanliness" of the environment (known as 'taharah' in Islamic terminology) as well as the Islamic teachings regarding "respect" for the environment as a point of departure for implementing EE during instruction. As such, one participant, Mrs Sarah observed:

As Muslims we tend to draw nearer or closer to all things natural. Islamically I always draw back to nature, the wudhu [ritual ablution prior to prayer] that we perform, it's [performed] with water.

Mrs Samia, a Natural Sciences teacher also concurred with the above statement by saying:

[The] main thing about being a Muslim and that's first and foremost in our religion is cleanliness. [The] Arabic word for it is tahaarah. So, cleanliness, just not on the inside but also your outside, if your environment is clean it cleanses the mind. Basically [in] Islam, the basic factor is cleanliness and it [Islam] does speak about respect for your environment as well.

The same concept of cleanliness was raised by the non-Muslim teacher above. This suggests that participants agreed to the aspect of cleanliness as being one of the primary reasons for being able to positively motivate learners attending Muslim schools towards environmental care. Respect for the personal self, respect toward others which includes the environment is also supposed to be a salient feature among Muslims. Teachers at Muslim schools utilise these concepts of cleanliness and respect for the environment as points of departure when implementing EE. Mr Soofia stated:

As educators, we expect [the learners] to behave in that way because we know [the learners are] Muslim. We might sometimes remind them of [environmental

care] but it comes from home, it's just in bred within them. [For example] they [the learners] know that they are not supposed to waste water and this [aspect] is part of Islamic belief.

It can therefore be assumed that the implementation of EE may not be difficult for the Muslim teachers because their values and beliefs are already coherent with the environment. A learner might also at times relate more comfortably to a teacher that shares the same culture and religious values as the learner. Since in most Muslim homes there are aspects of cleanliness (taharah) that are imbibed within Muslim children from a very young age, Muslim teachers were more easily able to implement EE than Non-Muslim teachers. Examples of these aspects are inter-alia, the Islamic etiquettes of using the toilet and cleansing oneself with water after urinating and defecating. Mr Haji, a Muslim teacher, who teaches Social Sciences commented:

[As a Muslim] you need to care and respect one another. Besides one another, you also got to care and respect your animal[s]. That's part of the environment, [and] you need to respect that. From a religious point of view, in our mosques, the first thing [when] you enter the mosque, you got to be clean. We call it 'being paak'. We got to be physically clean. So for example if you visit the bathroom and you pass on water there, you got to clean yourself properly. Either way, when you enter the mosque, before you do your prayers, you got to wash yourself from your forehead down to your toes and that's part of, I think, environment cleanliness. Then we need to also be kind to one another it's [kindness is] also part of environment.

The participant in the comments made above mentioned two features that serve as the main values of Islam that relate to the environment. Firstly, with regard to the aspect of cleanliness, Muslims ought to keep themselves and the environments in which they inhabit clean. Secondly, Muslims should display respect for themselves as well as the people and environment around them. As discussed in Chapter 4 (section 4.4.3), the Qur'aan and Prophetic Traditions (Ahaadith) serve as the two primary sources of these principles of cleanliness and respect for the environment. The Qur'aan (05:07) with regards to the aspect of bodily cleanliness prior to prayer (see Chapter 3: 3.2).

Furthermore, the Qur'aan (22:32) also emphasises the importance of respect to the physical environment, which is regarded as the "sign of Allah" (see Chapter 3:3.2). Therefore, some Muslim participants stated that they sensitised their learners to these signs of Allah by regularly quoting and integrating those verses of the Qur'aan and Prophetic sayings of the Messenger of Islam, the Prophet Muhammad (PBUH) into their lessons and thereby related this Islamic knowledge to environmental awareness. For example, Mrs Faria stated:

[If] I'm teaching [in Natural Sciences] about the atom for example, [so] we relate verses from the Qur'aan like in Surah Zilzaal [Chapter 99 meaning: 'The Earthquake']...[in] verses seven and eight, where [Allah] refers to, 'If you do an atom's worth of good you'll be rewarded'... where you do an 'atom'... so we [teachers try to] integrate the [wisdom found in the] Qur'aan with the knowledge that they [the learners] learn. We [teachers] make them [the learners] understand [that] in the environment every single thing is made up of atoms. If we teach [the learners about] the atmosphere and things like that, we speak about [what] Allah says that He has created the sky as the ceiling...so we relate all these verses of the Qur'aan to what we teach [in Natural Sciences]

Other participants felt that as Muslims, they have a moral duty to contribute towards society and the environment around them. Islam, according to such teachers, also determines how a Muslim ought to interact with people and the environment around people. Mr Mukhtar, who is the Head of the Department (HOD) of Islamic Sciences at the Allamah Ghaamidi School, explained the Muslim school teacher perspective on environmental concern by stating:

We [Muslims] believe that [any] human child is a Muslim because that child is in synergy, in synchronisation [and] in balance with the natural world, [and] with the environment. Of course and then you come into the real world and then you find it's sometimes not as balanced. So, as a Muslim person and as a Muslim educator and at a Muslim school on that, clearly, [care for the] environment is not far away. The human element is very clear, that is, it's our human duty to look after the environment because the environment does impact upon us.

Therefore, environmental care, according to this participant, is the incumbent duty of any Muslim. Muslim teachers, according to him, also carry a greater responsibility in imparting and promulgating environmental care to Muslim school learners. Another participant, Mr Tariq, also agreed that it is important for Muslim teachers to create an understanding of the Creator within the minds of the learners. This understanding may be achieved through aspects and phenomena found in the bio-physical environment because the Qur'aan (03:190-191) advises Muslims to do so. In this regard, Mr Tariq commented:

If [anyone has to] study Islam [in the light of] the Qur'aan and the traditions of the Prophet [Muhammed, Peace be upon him]...then [one] will realise that it is filled with the importance of understanding the Creator through the environment. [For example] we are told [in the Qur'aan]: "In the creation of the heaven and the earth, in the alternation of day and night there are tokens of remembrance for those of understanding, those who remember their Creator sitting, standing or reclining, and then they ponder over the creation and say: O our lord! You have not created all this in vain" [Quraan, 03:190-191]. If we do not take this as part of an important study then we have left out a big portion of our belief in the unseen treasures and in the unseen Hand of the Almighty [Allah], the environment is filled with evidence of the great Creator. Definitely, this has to be taken into the classroom and has to be [instilled] into the minds and hearts of these little ones [learners in order] that they fall in love with the Creator.

The environment, according to this participant, is filled with evidences of the existence of a great Creator. So, according to Mr Tariq, these evidences of an Almighty Allah ought to be presented to the learners in such a manner that they begin to fall in love with the Creator. This love for the beautiful creation of Allah will possibly inspire the learners to become more environmentally conscious. The discussion is now focused on other factors that enabled the successful implementation of EE in Muslim schools. Among such factors is the significance that Islam attaches to aspects of cleanliness and respect for oneself and one's environment. The conclusion from this section is that teaching in a Muslim school while one is a Muslim makes it possible and easier to

implement EE because the personal values are similar to both the school's values and the principles of the Quraan. Therefore, to be a Muslim teacher is enabling in this regard.

### **5.5.1.3 Learners' attitudes**

Some of the Non-Muslim participants mentioned during their interviews that they found some of the Muslim school learners to be very co-operative in the implementation of EE. Mrs Senna, a Life Sciences teacher, who follows the Hindu faith, and teaches at Topkapi Muslim School stated:

I have plants in the class[room] as well, I mean I don't have to tell these learners, they just go and water these plants on their own. They know that they need [to], so in that sense they know what they need to do to look after the environment. I see it in the class. I see [it] with these learners

The comment seemed to relate the positive behaviour of the learners to the fact that they were in a Muslim school. In turn, this behaviour does not necessarily reflect the values they received from the daily school lessons. It can be concluded that generally, most of the participants were happy with the co-operation they received from Muslim school learners when these participants tried to implement EE.

### **5.5.2 Schools' value system and environmental ethics**

It is not only the teaching methods and resources that are regarded as a constraint in implementing EE in Muslim schools by non-Muslim teachers. Even the curriculum structuring is a problem. Mrs Faria noted that the curriculum is especially designed to include Islamic subjects such as Qur'aanic Studies. This specialised structure creates time constraints that impede upon the implementation of EE in some instances. In this regard, she commented:

At Islamic schools, many of our periods are being taken away and we put Islamic subjects in there; so, as it is our time you know becomes much less to teach certain topics [related to EE].

Since none of the Muslim teachers raised a similar concern about the Islamic subjects, the concern was interpreted as related to the fact that the participant was non-Muslim. One of the interests I took to the research field, as influenced by the Islamic injunctions on environmental care, was that schools would have codes of ethics regarding the environment due to the Islamic values as discussed in Chapter 3:3.2. For example, the Qur'aan advocates that since humans are regarded as the vicegerents of Allah on earth, they have been tasked with the responsibility of care towards the environment:

It is He [Allah] who has made you [O mankind] His agents, inheritors of the earth.  
(06:165)

Indeed We [Allah] have bestowed honour upon the sons of Man, have allowed them to travel upon the lands and oceans, granted them sustenance and elevated their positions above the rest of the creation (17:70).

Mischief [and strife] has appeared on the lands [due to air and land pollution] and in the oceans [due to water pollution] because of the evil that the hands of [some] men have earned (30:41).

From the above Qur'aanic verses, it is evident that if Allah has appointed mankind to be the protectors of the earth from the mischief and strife, then they ought to develop some code of ethics by which the environment may be managed or even protected. It was, thus, interesting to establish how schools work in response to this Islamic obligation. The assumption was that it would be difficult to implement EE if schools did not have the code of ethics. When asked whether his school had a clear code of ethics regarding the environment, Mr Tariq thus remarked:

Honestly speaking... [an environmental code of ethics] is not part of our mission statement , nor is it written anywhere as a part our constitution or it hasn't really surfaced as such. So at the moment there's nothing of that nature in our school.

This observation concurs with the one given by Mr Shadwell who posited that EE was applied only on ‘a need to do’ basis, with neither the school’s guidelines nor time allocated to such needs. Some teachers argued that although environmental ethics were in the text of their school’s code of ethics and that to some extent environmental ethics were being practiced by some of the learners at their schools, there still remained the issue of learners acting ethically towards their environments beyond the school environment after attending school. For example, Mr Mukhtar maintained that environmental ethics was still not part of the “school-wide culture” in most Muslim schools. He believed that if environmental ethics were in reality part of this culture then it would have affected the community that the school serves. In this regard, he commented:

I don’t believe that it [environmental ethics] has filtered to that [the Muslim community] level [as] yet. [Although] it’s [environmental ethics is] there [in school policy] but I think the consistency of the [EE] programme is [still] not at its full [potential].

It can be concluded from the above statement that there remains a great need for the formulation of a clear set of ethics directly related to the care and awareness of the natural environment in Muslim schools. Naturally, this code will employ the ethos of Islam, that relate to environmental care, as its framework. Furthermore, if EE ethics and principles are not made part of the school-wide culture in Muslim schools, in terms of the school’s policies and practices, EE will not be able to be implemented on a perpetual basis. In the next sub-topic, the focus of the discussion is on the importance of teamwork as an enabling factor for EE implementation.

### **5.5.3 Teamwork and extra-curricular activities**

One of the findings from this study was that EE implementation is affected by teamwork and extra-curricular activities in the schools. For example, through eco-clubs teachers are able to work as a team in implementing EE in their schools. Allamah Ghaamidi School was the only school that had a functional eco-club. This club, although spearheaded by one teacher, enjoyed the support of all the teaching staff at the school. Hence Mrs Sarah, a foundation phase teacher at Allamah Ghaamidi, stated that

although EE might not be a priority at their school, a fairly good effort regarding EE implementation is being carried out by all the teachers at their school through this club. Furthermore, the teacher who co-ordinates the eco-club tries to involve all the learners, their parents and the teachers at the school when embarking on clean-up campaigns and environmental awareness initiatives such as Arbour Day. In addition to this, the eco-club of Allamah Ghaamidi School has also successfully initiated a vegetable patch along one section of the school. The club also facilitates regular clean-up campaigns in and around the school campus. This type of team spirit for EE implementation found at Allamah Ghaamidi filters through to the weekly environmental topics discussed at the school. Hence Mrs Sarah remarked:

Two weeks ago, our theme in the classroom was life cycles. When we have a theme, all the teachers are on board. Whoever teaches that class sticks with that theme so our themes interrelate with each other.

It is evident from Mrs Sarah's comments above that if every teacher is willing to work collaboratively with others, the implementation of EE in any school will be a smooth process. In addition to eco-clubs, Mrs Sarah also noticed that on most days, teachers at their school conduct their lessons outdoors in the school courtyard. She also stated that although these lessons might not necessarily be regarding the natural environment, the fact that the learners were learning in the natural environment would slowly instil a love and appreciation for nature. Hence outdoor learning, according to Mrs Sarah, is also another form of EE integration.

Another enabling factor, as expressed by the participants, was the inclusion of EE in the school's extra-curricular activities. Therefore, the participating schools that embarked on EE programmes during their extra-curricular activities were seemingly more successful in their implementation of EE than those schools that failed to do so. For example, Mr Sono mentioned that their school, Topkapi Muslim School, had initiated a paper recycling programme. The school has placed a massive paper recycling bin toward the entrance of the school. The paper is then collected by a paper recycling company on a regular basis.



A paper-recycling programme was also initiated by the eco-club at Allamah Ghaamidi School. In addition, learners at Topkapi Muslim School participated in the Collect-a-can competition, a metal recycling project. These learners also embarked on a project to build greenhouses in a local impoverished area close to the school. Some participants mentioned that the affluent home backgrounds that most learners at Muslim schools come from made it possible to secure financial resources for these initiatives. Therefore, learners' home background is an important enabling factor for EE implementation in the schools. Furthermore, Mr Mukhtar mentioned that his school regularly organises weekend sleep-over camping trips into the wilderness for their learners. These field trips have also positively contributed to the change in the learners' general attitude toward environmental care and appreciation. In this regard, Mr Mukhtar stated:

The [outdoor] camps [organised by the eco-club shows that] there's a lot of that [type of] encouragement [for EE] at the school. The reason [for organising these camps] is not to just change the school environment for a less formal environment, where they [the learners] can interact on a different level but it's [these camps are] also to make them appreciate space and the natural environment.

Mr Tariq mentioned that their school had also started a Scouts Programme for learners in the intermediate and senior phases. The learners who are members of the Scouts team also go out into the wilderness regularly for team-building and leadership activities. Mr Tariq commented:

Some of our students are connected to the Scouts group. They [the Scouts group] have sometimes overnight trips into the natural environment. They do it [scouting activities] here at school and out of school.

Mr Tariq also added that the learners who are Scout members were naturally very excited about these field trips. They also began to display a much more positive attitude toward aspects of the natural environment than those learners

who are not Scout members. The Scouts programme at this school, however, does not extend to the older learners in the FET phase.

Team work and collaboration may also be done beyond single schools for the success of EE. Muslim schools interact between themselves in the platform of sport and teacher development. (See Chapter 1:1.3) However, the interaction between Muslim schools is never on EE or general environmental issues. Mr Mukhtar believed that the main reason for Muslim schools failing to network on EE was that, at present, there is no honest co-operation between Muslim schools. In this regard, he stated:

Unfortunately, [between] the Muslim schools according to my own personal experiences [is that] everybody [like the school managers] speaks and discusses [EE initiatives at meetings]. [However] when they [the managers] go back to their schools [after such meetings], whatever they internally wish to do [regarding EE implementation] they do. They [the Muslim schools will] play sport together. They'll do a lot [of] other things [activities] where they can manage the [their] differences, [for example] the ideological, cultural and other differences [amongst themselves] but in my own opinion I don't think that [that this interaction between Muslim schools on issues such as EE] is an essential real integrated model.

Mr Mukhtar attributed this policy of dishonest co-operation amongst Muslim schools to ideological and cultural differences that exist between the stakeholders of the Muslim schools. However, Mr Tariq felt that the main reason for Muslim schools lacking in networking with each other in the area of EE, was merely due to the fact that EE was not holistically implemented in most Muslim schools in the first place. He states:

You can only promote this thing [EE] if your school is really bought into [practically implementing] this thing [EE] and your school is really doing good [ in EE implementation] because what are you going to propagate to another school and ignite the flame [of EE] in another school if your flame is so weak? So therefore it [EE implementation] will require us [Muslim schools] to first become motivated, to become driven, to become passionate [about EE] and then Allah-willing you can take it to next level where you can then network with other

schools and see how this amazing and important thing called EE can be promoted globally.

The lack of interaction between Muslim schools on environmental issues and the implementation of EE is a factor that has also greatly constrained the application of EE in Muslim schools in Gauteng Province. The main reason for this is the lack of motivation and passion for environmental care among some managers and teachers in some Muslim schools. There were also suggestions that the style and support of the leadership of a school assumes an important role in the process of implementing EE. In the next section, perspectives concerning the role of the support of the School-based Management Team in EE implementation will be discussed.

#### **5.5.4 Support of School-based Management Team (SMT)**

Among the factors that enabled effective EE implementation was the support of the SMTs of some of the Muslim schools. The willingness of those teams to support beneficial practices, whether in the form of outdoor learning at school or in field trips, contributed greatly to the success of EE implementation in those schools. These managers also try their utmost to provide their colleagues with support in the form of learning resources related to EE as well as advice on different ways to implement EE both within and beyond the classroom setting. Mr Mukhtar commented:

The school management, the board of trustees and governors have never, in my experience here, said no [regarding the provision of resources for EE]. Whatever the costs were, [as long as] [the resource] was for [the benefit of] EE.

These comments suggest that the SMTs of some of the participating schools were willing to provide resources for the implementation of EE. Therefore, the approach of the SMT would be a determinant for EE to be successfully or unsuccessfully implemented in schools. However, in some schools, participants complained about their SMTs not supporting them with resources to implement EE effectively. In this regard, Mrs Soofia commented:

If I have maybe slide shows or videos that I can integrate my lesson and [with] EE that would make it a lot easier to come across rather than me having to now try and somehow find a way to integrate that it into my lesson. Maybe interactive workshops where we can give ideas to other schools they can give ideas to our schools so that we can start practically doing things.

The participant opines that the implementation of EE would be easier and more effective if teachers were provided with adequate learning and teaching source materials such as video clips that are related to environmental learning. Furthermore, when Mrs Soofia was asked if the management of her school was supportive in providing resources for EE implementation, she replied:

You have to really motivate what you want [the management team] to do and then you either get your go ahead to [do it] or you don't but when we request for certain items [to implement EE] we've been requesting it for a while and now there's absolutely nothing that comes from it.

It is quite evident from the response made by Mrs Soofia that at times the management of some Muslim schools display an unsupportive attitude to the requirements of EE implementation. Mr Pondo also cited an example where he once requested for special containers to dispose of the radioactive and nuclear waste chemicals after conducting experiments with his Natural Sciences learners. He stated in this regard:

I do a lot of experiments in this lab and most of the chemicals are not natural, they are not bio-degradable. It is not allowed to put them down the drain. I raised [this issue] with the management of this school [that] we need containers after experiments [so that] we put whatever we put in those containers because there are companies who actually specialise in disposal of those chemicals but I was told, 'No if you are afraid that the acids will eat up or corrode the pipes you are more than welcome to put it in the main drain down there'. But the net effect is the same. Wherever [the chemicals] goes it's going to kill bacteria and it's definitely going to affect the environment.

The participant was blankly refused of the adequate disposal containers with the excuse that there were no funds available to hire pharmaceutical companies or these containers. Mr Pondo felt that this incident demonstrated to him that the management of the school was not sincerely supportive of EE initiatives. In any school, it is critical that the teachers and learners be intrinsically motivated to holistically implement EE.

Having considered participants' experiences and perceptions about EE implementation, the next focus is on the views regarding the National Curriculum Statement (NCS) as stated in the Curriculum Assessment Policy (CAPS) document in relation to EE implementation.

## **5.6 TEACHERS' PERSPECTIVES ON ENVIRONMENTAL EDUCATION INTEGRATION POLICIES**

As stated in Chapter 2, the CAPS policy document promotes aims that are divided into two categories, namely; general aims for cross-curricular implementation and aims that are specific to each subject. Amongst the general aims, the curriculum strives to infuse the principles of human rights, inclusivity and environmental and social justice within learners (see DBE-CAPS, 2011). It also aims to produce learners that are able to employ science and technology effectively and critically showing responsibility to the environment and health of others. Therefore, scientific knowledge should be utilised responsibly by learners, in the best interests of society and the environment (DBE-CAPS, 2011). Thus, although there was a perception that the present CAPS document is less explicit about the topic of EE integration across school curricula compared to the former national curriculum statements, analysing it revealed a number of principles of EE implementation enshrined within its general aims and certain parts of different subject statements. The participants' perceptions regarding such policies that called for the integration and implementation of EE were also examined. The next section is therefore dedicated to those views.

### **5.6.1 Environmental Education within the school curriculum**

The findings touched on the long standing debate about whether EE should be integrated in various subjects or if it should be a separate subject within the school curriculum. The majority of participants were of the opinion that integrated approach of EE was the best. In this approach, EE draws on topics from different subjects and different perspectives. The integrated approach, according to the participants, ensured a more holistic development of the learners. For example, Mr Mukhtar stated:

I think the integrated [approach is preferable] because life seems to be an integrated complexity. I think Environmental [Education] is a way of life, [so] a way of life can't be just in the classroom and at school, and then the minute we get outside the school then we go back to a [different] quality of life. So maybe the integration in all subjects will tell them that it's a way of life, not just a subject.

Mr Tariq also shared the same sentiments as Mr Mukhtar. He stated:

I think if we [are] going to make [EE] a separate subject then it might just be done in that one period, but if we have to integrate it among all the subjects, then it's a continuous reminder by all educators because it's part of every learning area. Just isolating it to that one period, or two periods or three periods a week will be that one and a half to two periods that [the learners] would be only involved in [EE]. So, I would rather go for integrating it [across school curriculum]

Continuity in EE implementation, according to this participant, may only be realised if EE is integrated across all school subjects. Most of the participants believed that in the integrated approach of EE implementation, school subjects are also not taught in isolation to each other. Therefore, according to these participants, this approach would also give more impetus to the holistic development of learners. Furthermore, these teachers felt that learners should be introduced to the principles of EE from a very young age. Mr Shadwell, a Life Sciences teacher at Cahira Islamia, thus commented:

We cannot wait for the learner to come to school to become of an age to learn Technology or Life Sciences, Natural Sciences [related to] the natural environment. It should be done from a very young age from early on.

On the other hand, there were some participants who wished for the implementation of EE to be in the form of a separate subject. The reasons cited by these teachers were that, firstly, a formal subject called EE would create a better structure for the presentation of EE than when it is just mentioned in policy and just touched on by various subjects. Secondly, special time could be dedicated to EE to sensitise learners about global environmental issues. Thirdly, there could be a formal application of assessments, directly related to environmental awareness, by adopting this approach.

Mrs Sarah opined:

I would have preferred it as a separate subject actually because you have to allocate that time to it. You have to assess the child in a certain way and it doesn't have to be on paper but that formal period for Life Sciences. It just creates more structure and then the children also know that that's something they need to learn.

The participant's opinion is that there is a possibility that learners may not take EE seriously because it is not a subject on its own but integrated into other subjects. In addition, the integration may also cause some teachers not to dedicate time to EE. Mr Mukhtar felt that there was a need for EE implementation to be more consistent and structured within Muslim schools. The consequence of this separation of EE from other subjects, according to Mr Mukhtar, would result in the learners developing and displaying positive behaviour and good habits towards the environment. Mr Mukhtar also was of the opinion that EE needs to be institutionalised and driven in Muslim Schools. In this regard, he stated:

To make certain that [EE] perpetuates, it has got to become a culture at the school. It's got to become, and this is the keyword...it's got to become 'institutionalised'...So, whatever artefacts are required [for EE implementation] whether it's cleaning the litter, whether it's about the more detailed discussion on Mother Earth, it's got to be 'institutionalised'. I found that not only in EE but any project even a thing taken for granted [like] simple basic discipline at school. I found it differs from school [to school]. I found it differs from term to term; sometimes it differs from year to year because sometimes the people [teachers]

that drive it, you know either [leave the school] or [they] are given other duties. So if [EE] is not institutionalised in the school as a matter of policy and practice, it's going to die a natural death.

It can be argued that integration of EE in subjects rather than placing it as a separate subject within the curriculum would constrain its implementation in a particular school context. Instead, the opinion is that it should be an institutional norm that EE is implemented across curriculum and practices.

In all of the Muslim school sites that I visited, there was some form of EE implementation taking place albeit only as part of implementing the aims of the NCS as stated in the CAPS document. However, there were only two schools that, according to my observations, implement EE in a holistic manner that involves whole school participation in initiatives and projects related to EE. Mr Shadwell described the situation at his school by mentioning:

Honestly although we do EE as part of [the] Life Sciences curriculum, other than the school curriculum, the National Curriculum Statement, it is not done outside of that in our classes. Various activities Arbour Day, World Environment Day are not practiced at our school. I have been here in this school now; this is my eighth year and never has it been mentioned or supported in any way.

It may be gauged from the above comments that EE, in some Muslim schools, is sometimes implemented only as part of the national curriculum requirements in the contents of certain subjects. As such, learners are deprived of experiencing environmental learning beyond their classrooms, especially in extra-curricular activities that have environmental focus within them, such as those mentioned in the comment. The participant also cited the lack of awareness of such activities and the lack of support from the management of the schools as reasons for this constraint.

There were various other factors that were considered as impediments to the rightful implementation of EE. In Chapter 4 it was stated that the sample for this study included teachers teaching subjects that have a greater environmental focus in them. These include subjects such as Life Sciences, Geography, Social Sciences and Natural



Sciences. At this point, it should be noted that in most Muslim schools, owing to the short supply of teachers, many teachers employed therein are expected to teach more than one subject in different grades. For example, Mrs Soofia teaches Natural Sciences as well as Mathematics at her school (See Table 4.3). This situation was an advantage for this study because even though the initial sample was focused on teachers teaching particular subjects, it became automatic to get comments about other subjects which would otherwise not have been known.

During the interviews, some participants expressed their opinions that with some subjects, such as Mathematics and Accounting, it was slightly challenging to implement EE within the curriculum. The reason for this challenge, according to these teachers, is that the content found within subjects such as Mathematics and Accounting does not easily lend itself to EE. The point made was that for some subjects, there are no guidelines about the integration of EE and even policy is not explicit about how those subjects should integrate EE except that integration should be across curriculum. Mr Sono commented:

If the subject lends itself to integrating environmental issues and environmental policies [in its] content, then I think that's good, it should be done. But if it's not written down as a policy then it's difficult to incorporate [EE] especially with the time factor involved in completing the syllabus.

Therefore, the curriculum and policy may be regarded as having a constraining role in the implementation of EE. However, other participants disagreed with this perspective. They felt that the bio-physical environment may be used as a good example for teaching learners in subjects such as mathematics. Examples given included the use of environmental examples in teaching how to solve mathematical concepts such as statistics and probability. Other comments included:

[EE] can be integrated [in] Statistics and [in] Maths and also [in] Probability (Mrs Samia).

When we speak about Mathematics, you can count anything anywhere, whether you taking the child outside and making your child, at a lower grade, count the

leaves on a particular branch or you making a child count bricks or you making the child count anything that deals with the environment...Basically you are bringing in Maths, because you can't teach subjects in isolation. Everything relates to the environment so we have to take them out of the classroom situation and show them that Maths is not just in the class but it's out there as well (Mrs Faria).

The above comment suggests that the knowledge content of all school subjects should in some way be related and that environmental concepts are able to make this happen. Exemplification of the environment when instructing and assessing learners may be one way of implementing EE in all subjects. Furthermore, *CAPS-Mathematics* (2011:09) also stipulates that for learners to develop their mathematical skills, they should "participate as responsible citizens in the life of local, national and global communities" in developing their mathematical skills. Therefore, teachers, according to CAPS, are encouraged to integrate EE into the subjects that they teach by employing real-life scenarios that have an environmental focus. In fact, when analysing the CAPS document, it was found that the specific aims of the Accounting curriculum, for example, state that learners should be able to relate their accounting skills, knowledge and values to real-world situations (*CAPS-Accounting*, 2011:08). The Accounting curriculum statement (*ibid*: 09), also declares that learners should develop critical and logical and analytic abilities and thought processes to allow them to apply skills to current and novel situations. Therefore, according to the CAPS document, real life situations, which will naturally include environmental issues, should be integrated into Accounting lessons.

Similarly, in its specific aims, *CAPS-Mathematics* (2011:08) prescribes, that "real life situations should be incorporated into all sections whenever appropriate" and that "contextual problems" should include challenges relating to, inter-alia, "environmental issues". This situation suggests that sometimes teachers are not able to interpret the content of the policy or subject specific aims and mistakenly conclude that they are not accommodative of the implementation of EE.

Nevertheless, the constraint mentioned about the implementation of EE in the schools was insufficient training of teachers for such implementation. Mr Pondo argued that

most teachers have not received enough training with regards to implementing EE when teaching certain subjects; hence he stated:

[EE implementation across the curriculum] is a step in the right direction but maybe there hasn't been adequate training to bring on board everybody [on] how to incorporate the aspects of EE in teaching Mathematics and all the other subjects. [It's] not very clear [on] how you would address environmental aspects when teaching Mathematics. It's quite easy when you are dealing with [the] sciences because most of the time you are dealing with the environment itself [for example when] you are dealing with your Life Sciences,[or] your Natural Sciences.

In other words, in addition to inability to correctly interpret the policies, teachers may be constrained by lack of training even when they are willing to implement EE in the schools. When asked to elaborate on the lack of training being a factor that constrained EE implementation in the school that she teaches at, Mrs Soofia replied as such:

Lack of training, because [what] we all have [is] basic information about the environment. As a teacher, you have what you know but there are the nitty-gritty parts [regarding] things that affect the environment. I might know something but another teacher doesn't know it, and that's where the problem comes in. So, the lack of training would [be] the lack of [access to] really proper facts [on] how to implement certain issues, relating to the environment, in to your syllabus. We all [only] have that basic information.

According to Mrs Soofia, lack of training implied lack of basic knowledge for teachers on global environmental issues and on the implementation of EE in the contents of certain subjects. The other issue of concern about EE integration in school curriculum, in addition to lack of training, was limited time. Many participants argued that they were too busy completing their syllabi and hence they had no time at hand to implement EE in extra-curricular activities consistently. Even in the Science subjects where EE is explicitly applicable, it is only implemented when a topic that relates to an environmental issue, arises. Mr Pondo thus complained:

We got so much work to cover. We've got a work schedule that you must cover by such a date, so you have hardly a minute to spare outside the classroom. So, time is a constraint. I think I'd be 95% correct to say there are no extra-curricular activities at this school. Everything is just like that, they [the learners] need education, [so] learners attend classes, after classes they go home, there isn't any other extra-curricular like activities [related to EE for example].

This comment suggests that the participant regards EE as an extra-curricular activity rather than part of the subject's content. The implication for understanding EE this way is that an individual teacher may not bother to do EE in the classroom. The participant made a comment by firstly stating that some teachers will only implement EE outside the classroom if they have adequate time at hand to do so. Therefore, EE implementation in Muslim schools is mainly challenging for many teachers due to lack of time and also the opinions that it is an extra-curriculum.

The lack of being personally motivated to implement EE beyond the classroom on the part of some teachers teaching at Muslim schools was described as a constraining factor. Mrs Faria commented in this regard:

There are different teachers and some teachers are from [the] old school [of thought] and they believe [that] just being in the class is good enough. You do have those type [s] of teachers that don't want to go the extra mile.

Mrs Faria's comment suggests that one of the reasons for some teachers not wanting to implement EE beyond the classroom is that such teachers believe that classroom interaction is sufficient for environmental learning to take place. These teachers seem to lack motivation to allow learners to experience and discover environmental learning out of the classroom.

Participants also felt that many of the learners in Muslim schools, in some instances, also lacked the required motivation to rise beyond their sense of duty in caring for the environment. According to the participants, the reason for this lack of motivation on the part of the learners, stemmed from the home environment. Many learners attending Muslim schools hail from affluent homes and as such, find it, for example, undignified to

collect litter and to conduct general school clean-up campaigns. Mr Haji thus commented:

And today's children of course are spoilt... maybe from the parents, I don't know, they seem to not relate to the word 'respect'. They tend to dirty classrooms, leave lunch boxes [lying around]. Our workers provide containers to clean the environment. These kids will totally ignore [the containers]. Now what I've done is, before they [the learners] enter my class, I make them [the learners] pick up some of the things in my area where I teach [and make them throw the litter] into the bins. I say [to them] that [act of picking up litter] is called respecting your environment.

Mr Haji's comment indicates that the main reason for some learners not displaying environmental care is that they lack the consciousness of respecting the environment. The environment is taken for granted by these learners. Mr Haji suggests that the other reason for these learners showing an apathetic attitude towards the cleanliness of their school's physical environment is that these learners do not receive enough motivation for environmental care from their parents.

Participants maintained that generally, Muslim schools employ plenty of support staff to clean up after lunch breaks. As a result, many learners are not adequately intrinsically motivated to clean up their litter. In as much as these learners do take part in many outreach programmes such as charity drives, trying to build green houses and collecting paper for recycling yet at the same there is a lack of motivation in keeping their work space and play areas free from litter. The participants believed that a great percentage of the education that learners ought to receive is from their own home environments as well. The next section is dedicated to the physical space as a factor that was found as affecting EE implementation in Muslim schools.

## **5.7 Physical space and Environmental Education in Muslim Schools**

The nature of EE as discussed in the previous sections demands a physical space in one way or another. Unlike other subjects or topics of school curricula which can be

taught and learnt successfully anywhere, EE can succeed in different kinds of spaces than one. This is the assumption that I took to the field as informed by literature and from my observation in the field I found that three of the five participating schools occupy very small premises. The limited space in these schools hampered the implementation of EE. Many of the participants in those schools complained about not being able to plant trees or have an annual tree-planting day due to the lack of space in and around the school campuses. Mrs Najma, an HOD in the Foundation Phase at the Allamah Aaloosi School, stated that at some point learners had brought olive trees and there was not enough space to plant those trees. Mr Pondo also felt the same way about the physical environment of his school campus. When I asked him to compare the implementation of EE in Pasha Mahmud Turki School with that of any of the previous schools in which he taught in the past, he answered as such:

Maybe the difference between that school and this one is that this [Pasha Mahmud Turki School] has got a small campus and there [are] tiles everywhere...but [the other] school that I'm referring to had a very big campus, the schoolyard was big.

It is quite challenging to holistically implement EE in a school that has confined spaces. Such a school is not able to plan environmental awareness events like Arbour Day as well as environmental projects such as clean-up campaigns or developing an ecosystem within the campus of the school. However, in addition to limited space, the comment above indicates that tiled school surfaces are another hindrance to EE. It may not be easy to plant trees or do some other environmental activities in schools with such surfaces.

## **5.8 Community-based Environmental Education initiatives**

The relationship between any school and the community is a critical and important relationship. There ought to be an active and mutual involvement in the affairs of the community by the school and vice versa. I was informed by participants that there was some form of participation of the Muslim schools in community outreach programmes, especially in the area of poverty alleviation and care for the aged and the infirm. Mr Haji explained some of the community outreach programmes initiated by his school:

Our school implements what we call 'Adopt a granny-day'. Now it [this initiative] may not fit in [with EE] but we need to care for the old people too. They are part of our environment. The other one [initiative] we have at our school is also called a 'Winter-warmth day'. At the moment we are busy collecting enough blankets here; we supply the local squatter camps in and around our area here, which is part of what we call environmental-care.

Mr Haji's comment implies that Muslim school managers, teachers and learners are always willing to embark on charitable drives to improve the conditions of poverty-stricken environments. The willingness of Muslim schools to embark on charitable projects stems from the fact that in the Qur'aan there are verses that encourage people to care for other human beings. For example, Qur'aan (28:77) states:

And [O mankind] do good unto others just as Allah has done good unto you.

Although these projects are important for the participation of Muslim schools and Muslim school learners, yet there are no concrete programmes in place that are directly aimed at guiding such programmes toward EE in many Muslim schools. Allamah Ghaamidi School was the only school that stated that they had organised a clean-up campaign in the community in the past. The community is thus also sensitised to the importance of environmental hygiene when the local school engages in such programmes. That way, EE extends beyond school premises.

## **5.9 SUMMARY**

In this chapter, the data that were collected during the semi-structured interviews with the participants of the study was presented. It began with a brief physical and historical observation of the five Muslim school campuses that were visited. The different themes that arose from the data were development by first focusing on the various meanings that the participants attached to the term 'environment' as well as the term 'EE'. The discussion then went on to present the opinions of the participants regarding the different factors related to the implementation of EE within their schools. The Qur'aanic verses, Prophetic Traditions and the CAPS document in relation to the environment and EE and their possible contributions in the implementation of EE was also reviewed. In

the next chapter, a discussion on the findings, conclusions and implications for practice, policy and EE theory is presented. In this discussion, the focus will be on finding ways in which the constraining factors of EE implementation in Muslim schools may be addressed. The other aspect of this discussion will attempt to look at the ways in which the enabling factors for EE implementation may be sustained.



## **CHAPTER 6: DISCUSSION OF FINDINGS, CONCLUSIONS AND IMPLICATIONS**

### **6.1 INTRODUCTION**

In Chapter 1, the issues that motivated the initiation of this study were mentioned. It was stated that despite global efforts in the past decades to prevent the furtherance of environmental degradation, environmental issues such as global warming, climate change, diminishing natural resources and wildlife extinction still continue to exist. The critical role that EE assumes in creating the awareness to find solutions to these environmental issues was highlighted. Also mentioned in Chapter 1 was the need to observe and understand the processes of a holistic implementation of Environmental Education (EE) in schools as one of the strategies to address environmental degradation. As such, this study purposed to investigate the contributions that Muslim schools are making or may make toward sustainable development through their implementation of EE and the enabling and constraining factors for such an implementation.

Literature suggests that many schools in South Africa experience challenges when trying to implement EE due to factors that constrain this implementation. However, Muslim schools operate within the principles expounded by the Qur'aan and Prophetic Traditions which advocate for the need to care for and act ethically toward the environment. While this is the case, it cannot be assumed that these schools would not have problems when implementing EE as is the case with other schools; hence the decision to embark on this study.

In Chapter 5, the data that were collected during the process of this study were analysed and findings were presented in various themes. The purpose of this chapter is to discuss these findings against the literature and theories that were presented in Chapters 2 and 3 in order to draw conclusions from this study and implications for practice, policy and theory. This chapter begins with the summary of findings followed

by a discussion of the findings. In addition, the implications of the findings of this study together with recommendations will be presented through the identification of gaps appearing in EE policy and practice in Muslim schools. It is hoped that these gaps will prompt further research by EE scholars into EE policies and practices at Muslim schools.

## **6.2 SUMMARY OF RESEARCH FINDINGS**

The main research question of this study was divided into six sub- research questions to simplify it for the purposes of gathering rich data. The summary in this section is presented according to the sub-research questions with the main purpose of addressing the main research question. It should be noted that the last two research sub-questions will be answered in the implications of research findings section (see Chapter 6:6.4). The first research question was stated as follows:

- *How do teachers teaching in selected Muslim schools in Gauteng understand the concept 'environment'?*

The main findings to this question were that most participants only referred to the bio-physical dimension of the term 'environment'. Other dimensions of the term 'environment' such as the socio-economic or the political dimension were not mentioned. Therefore, it can be said that many Muslim school teachers are not aware about the various dimensions of the term 'environment'.

The second research question was:

- *How do teachers teaching in selected Muslim schools in Gauteng understand the concept 'Environmental Education' (EE)?*

The main findings suggest that most participants regarded EE as a concept related to instructing and educating learners "about" the natural environment. In so doing, the other two dimensions of EE identified in literature, namely; that EE is education "for" and education "in" the environment were not much acknowledged by most participants. This observation where EE is regarded only as education about the environment may be attributed to the teachers' insufficient literacy about EE.

The third research question was:

- *What do the teachers perceive as enabling factors regarding the implementations of EE in selected Muslim schools in Gauteng?*

The main findings were that all participating schools implemented some form of EE. This implementation was mostly in those subjects (such as Life Sciences and Geography) that have environmental foci in their specific aims in the curriculum policy. This is chiefly due to the stipulations of CAPS being slightly more explicit about EE implementation in these subjects. Hence there were four enabling factors that were commonly cited by most of the participants. Firstly, these factors included the influence of the teachers' beliefs and value systems on EE implementation. Although there were some participants who were non-Muslims, yet their own religious beliefs also encouraged a positive approach toward EE, which in turn, enabled EE implementation. Secondly, the availability of support structures in the form of team collaboration between teachers is the other important factor. Participants opined that they were able to implement EE holistically when they received support from their fellow colleagues. Thirdly, the support of the SMT's for EE implementation was a crucial factor. The efficiency with which any school is managed depends mostly on the leadership of its SMT. Therefore, a major enabling factor for EE implementation, according participants, was the support that they received from the SMT. Fourthly, the inclusion of EE in extra-curricular activities of the school, such as Arbour Day, was found to be an enabling factor.

The fourth research question was:

- *What do the teachers perceive as constraining factors regarding the implementations of EE in selected Muslim schools in Gauteng?*

Participants mentioned many factors that constrained the successful implementation of EE in their schools. These factors include firstly, those factors that are found within the curriculum itself that may impede upon the rightful implementation of EE. For example, the CAPS document does not explicitly prescribe the manner in which EE ought to be implemented. Second, participants cited the lack of environmental ethics in their school policies such as in the schools code of ethics. Thirdly, lack of time to implement EE

holistically was also a factor that was stated by many participants. For example, participants complained that the completion of core syllabi coupled with their daily clerical duties prevented them from implementing EE beyond the classroom.

Fourthly, some participants regarded the lack of physical space as an impediment to implementing EE beyond the classroom context. The campuses of some of the participating schools were not adequately spacious to implement EE during outdoor activities. Some schools have concrete surfaces which are not appropriate for planting trees or developing vegetable gardens. Fifthly, some participants maintained that they were insufficiently trained to implement EE. This lack of training suggests that teachers are left to depend on trial and error regarding the implementation of EE in the schools.

Sixthly, the lack of motivation on the part of some learners and some teachers toward EE was also regarded as a constraining factor. The main reason for the teachers' lack of motivation to implement EE was due to the lack of time. These teachers complained that they were too busy completing syllabi and had many administrative duties to perform.

The reason for some of the learners lacking motivation toward EE was due to their belief that environmental care, such as litter removal, is an undignified task. These learners' affluent home backgrounds also played a significant role in furthering the lack of motivation toward EE on the part of such learners. Participants stated that some of the parents of these affluent learners employed domestic servants to maintain cleanliness of their home environments. Therefore, many of these learners were not used to maintaining a litter-free environment (especially at school) by themselves. Finally, some participants complained about lack of communication and networking between Muslim schools on EE implementation. These participants opined that many Muslim schools in Gauteng only interact on common forums related to sport, cultural and academic issues. However, EE issues were never discussed at such forums.

### **6.3 DISCUSSION OF FINDINGS**

In this section, the main findings that were summarised in 6.2 above are discussed in relation to literature in order to address the main research question, namely; What are

teachers' experiences of the implementation of EE in the selected Muslim schools in Gauteng? The findings reveal that teachers in the Muslim schools experience both the enabling and the constraining factors towards the implementation of EE. These factors have been found to be in three parts. Firstly, there are factors that relate, in one way or another, to the teachers' own beliefs and understandings of the environment and EE and their interpretation of the policies and the principles of Islam. Secondly, there are contextual factors in the schools which also either enable or constrain the implementation of EE. Thirdly, there are also factors found within the curriculum that either enable or constrain the implementation of EE.

### **6.3.1 Teachers' personal understanding of the environment**

One of the questions of interest that was taken into the field in this study was the manner in which Muslim school teachers perceive the term 'environment'. As was discussed in Chapter 2 (2:2.5), authors such as Kanyimba (2009:22) and O' Donoghue (1995:16) suggested that the term 'environment' refers to all "the social, political and bio-physical dimensions that affect the conditions that surround people". According to these scholars, the term 'environment' is intrinsically multi-dimensional. Furthermore, Hebe (2009:09) opined that the concept 'environment' is a very "broad" term that "has been given various meanings by different people" (see also Shobeiri, *et al.*, 2013:89). Contrary to this multidimensional understanding of the concept 'environment', teachers that participated in this study apparently conceptualise the environment as a biophysical sphere. The problem about this marginal understanding of the environment is that it unilaterally focuses one aspect of 'environment' which bears a risk to negatively affect the way in which EE content is delivered and facilitated by teachers. Consequently, this limited conceptualisation of the environment suggests a possibility that learners will also not understand other dimensions of the environment. For instance, learners might fail to understand that concepts such as poverty and unemployment, (in addition to global warming and climate change) are also issues that affect the environment. Furthermore, document analyses of the Qur'aan and the CAPS document also revealed that the term 'environment' is not explicitly defined by these two documents. This may be a contributing factor to teachers' limited understanding of the environment when

comparing their definitions to literature. Therefore, it can be concluded that most Muslim school teachers in Gauteng lack the necessary knowledge regarding the multi-dimensional nature of the term 'environment'. Therefore, this finding is coherent with the findings of authors such as Carvello (2009:54) and Kimaryo (2011:17) who maintained that the inadequate knowledge of teachers regarding environmental concepts may be a factor that will constrain the successful implementation of EE (see Chapter 3:3.5).

However, the few participants that referred to the aspects of the multi-dimensionality of the environment mentioned an interesting dimension that was not identified from the literature reviewed for this study, namely; the emotional and spiritual dimensions. Briefly, these participants mentioned that people need to be surrounded by these emotional and spiritual environments. This understanding of what the term 'environment' entails may be attributed to the religious values that these teachers espouse to as discussed in Chapter 5:5.5.1. Thus, the religious beliefs of teachers may be seen as contributing an important dimension in the understanding of the concept 'environment'.

### **6.3.2 Teachers' understanding of Environmental Education**

As discussed in Chapter 2 (2.2), Kimaryo (2011:29) posits that for EE to be meaningful, it is important that the learners gain knowledge about EE concepts while being "in" the environment. These experiences will also encourage the learner to take the necessary steps to protect and conserve "for" the environment in the future (*ibid*). Therefore, this study's findings revealed that many participants understand EE to be mainly education "about" the environment. Therefore, these findings show that there is a lack of awareness about the different dimensions of EE, such as education "for" and "in" the environment among the participants. Such lack of awareness is hence a constraining factor for the implementation of EE in those schools because teachers may not perceive the need to allow learners to learn "in" different environmental contexts such as the outdoors. Furthermore, learners may understand that perhaps EE is only learning "about" the concepts of the environment in the classroom. These findings also suggest that Maluleke's (2015:25) recommendation that teachers should be well informed about the nature and scope of EE to enhance the quality in which they implement EE across

the curriculum, is not considered in the context of the participating schools ( cf. Carvello, 2009:54; Dymont & Hill, 2015:30; Hebe, 2009:17; Raselimo & Wilmot, 2013:04; Varvaro, 2015:36).

Although the Qur'aan does not explicitly offer a definition for EE, yet there are many instances therein where Muslims are encouraged to develop strategies for environmental care (see Quraan 07:31; 2:30; 22:32). Therefore, the conclusion that may be drawn is that the lack of necessary knowledge about the dimensions of EE may be due to the ignorance on the side of some participants. Consequently, such ignorance may be regarded as a hindrance in the implementation of EE.

### **6.3.3 Teachers' personal beliefs and values**

Most Muslim schools in Gauteng have both non-Muslim and Muslim teachers in their employ. Findings were that regardless of faith to which the participants belonged, they were unanimous that their personal beliefs and value systems advocated a positive approach to EE and its implementation. The aspect of cleanliness whether related to personal hygiene or environmental health is of paramount importance not only in Islam but in most religions (See Chapter 3:3.5 and Chapter 5.5). Some non-Muslim teachers' beliefs were consistent with the Muslim faith and were able to sensitise learners about EE aspects such as personal hygiene, environmental cleanliness and respect for the environment in their lessons.

These findings support the views held by EE scholars such as Shobeiri, *et al.* (2013:92) who maintained that in all divine and great religions, cleanliness, purity and lack of pollution are considered part of religious duties (see Chapter 3:3.2). Therefore, the adherents of religions have continued to display the same behaviour towards nature in their special ways (see also Jenkins & Chapple, 2011:458; Mohamed, 2012:01; Shobeiri, *et al.* 2013:92). Therefore, the influence of the teachers' religious beliefs and values do encourage the implementation of EE. The conclusion drawn from this finding is that teachers that do not implement EE may not associate such non-implementation to their religious beliefs.

### **6.3.4 Lack of motivation as a constraint for the implementation of Environmental Education**

As discussed in Chapter 3:3.5, the primary determinant for successful and holistic EE implementation in any school lies in the positive attitudes that both teachers and learners display towards the environment (Varvaro, 2015:39). One of the attitudes that this study found to be lacking among some teachers in the Muslim schools was motivation. The main reason was that the participants cited for the lack of motivation to implement EE was the lack of time (cf Maila, 2003:81). They argued that they had very little time to spare to implement EE as they were too busy completing syllabi and grading assessments (cf Maluleke, 2015:07). They also maintained that classroom interaction was sufficient for EE implementation.

Motivation is also insufficient even on learners. Learners were reported as not willing to actively participate in daily activities encouraging environmental care such as picking up litter because they regarded some activities as undignified for them but only to be carried out by the support staff and janitors of the school. The participants attributed the negative attitude of these learners to their home environments. It seemed that, according to the participants, learners with this type of attitude often came from very affluent homes and were thus, not used to cleaning up after themselves as these activities were usually carried out by the domestic workers that were employed by their parents at home (see Chapter 5:5.6.6). Literature for this study was also found to be silent on how parenting styles influence learner attitudes to EE. Therefore, social categorisation, which is a way in which this attitude displayed by learners is described in this study, is a constraint in the implementation of EE in the participating Muslim schools. In the following section, a discussion of the influence of the contextual factors on the implementation of EE will be presented.

### **6.3.5 Contextual Factors**

In Chapter 3:3.5, it was discussed that there are certain factors that either enable or constrain the rightful implementation of EE in schools. Such factors include the design of the curriculum, lack of time, lack of resources, inadequate teacher-training on the implementation of EE in a cross-curricular manner and “overcrowded time-tables”



(Carvello, 2009:54; Dymont & Hill, 2015:24; Evans, Whitehouse & Gooch, 2012; Kimaryo, 2011:18; Nsubuga, 2011:115; Reddy, 2011:16). Similarly, this study found many factors that occur within the context of Muslim schools that either enabled or constrained the implementation of EE. A contextual factor that enabled the successful implementation of EE as informed by the some participants, was the positive team spirit among the teaching staff. The next section is dedicated to an analysis of this factor.

### **6.3.5.1 Teamwork amongst teachers in implementing Environmental Education**

Consistent with what is suggested by Carvello (2009:105) that “collective responsibility” is an important aspect in the effective implementation of EE. This study found that if every teacher is willing to work co-operatively, the implementation of EE in Muslim schools will be a smooth process (see Chapter 5:5.5.3). In the schools where there was team collaboration between teachers regarding EE, implementation was described as easier than in the schools where teamwork was absent. This situation was regarded as a contextual factor because not all schools were able to have co-operative engagement regarding EE due to the situations in the different school contexts. For example, participants mentioned that some teachers regarded EE implementation as only the responsibility of those teachers who teach those subjects (such Life Sciences) that have an EE focus in their core-content. Therefore, these teachers did not regard EE as the “collective responsibility” of all teachers because of the subjects that they teach.

Furthermore, Carvello (*ibid*) argues that teachers need to initiate the process of EE via the inclusion of every member of the school community, which was also found to be an important factor in this study. For example, the eco-club of Allamah Ghaamidi School invites parents and members of the school community, such as university professors, to participate in their annual Arbour Day programme. Therefore, it can be concluded that if any school wishes to successfully implement EE, it is imperative that the teachers create an atmosphere of team spirit for EE implementation among themselves and other related stakeholders. In addition, the SMT of any school is undoubtedly partially responsible for creating this positive team spirit. Therefore, in the next section, a

discussion on the integral role that the SMTs of Muslim schools assumes in the facilitation of EE as informed by the participants is presented.

### **6.3.5.2 Support of School-based Management Team (SMT)**

The support of the SMTs in Muslim schools plays a crucial role in the implementation of EE (cf. Varvaro, 2015:54; Carvello, 2009:55). Among the functions of the SMT are to co-ordinate the extra-curricular activities of any school that should include activities related to EE (see Chapter 5:5.5.4). Some of these activities include paper recycling programmes, collect-a-can competitions, metal recycling projects, projects to build greenhouses, field trips and a Scouts programme (cf. Karodia, 2010; Mohamed, 2012:241; Maluleke, 2015:08). Most of these activities were either facilitated by the SMTs or the eco-clubs of the schools. Furthermore, participants also stated that due to most learners coming from financially-stable backgrounds, it was not difficult to secure funds to embark on those initiatives. Therefore, this finding of the support of SMTs suggests that EE implementation is successful when there are partnerships created between the community and the school. Therefore, it is the responsibility of the SMT to develop such partnerships as was the case in Allamah Ghaamidi School (Chapter 5:5.8). As a result, it can be concluded that if schools want to implement EE holistically, embarking upon on EE projects in their extra-curricular activities and the involvement of SMTs would be significant steps in the right direction.

Among the policies that are important in schools, is the school's code of ethics. The next section is dedicated to a discussion on the school's code of ethics and its relationship to EE implementation.

### **6.3.5.3 Environmental ethics and Environmental Education implementation**

In Chapter 5:5.6.2, it was stated that Muslim schools are expected to abide by the principles of Islamic environmentalism as stated in the Qur'aan. This assumption was informed by the arguments of authors such as Mohamed (2012:169), Khan (2009:30) and Ramadan (2009:155), all of whom believe that Muslims need to develop their own terms of reference with regards to environmental ethics as well as "drive" environmental

health in Muslim schools. Findings were that an Islamic code of ethics toward the environment was absent both in policy and practice in some participating schools (see Chapter 5:5.5.2). As a result, teachers have observed some learners at their schools to have very little regard for the environment. In most Muslim schools, according to some participants, it is usually taken for granted that due to their strong Islamic background, learners are “supposed to know” that they need to care for their environment. For example, Muslim school teachers often “expect” Muslim school learners not to waste water because saving water is one of the basic teachings of Islam as this concept ought to have been taught to learners by their parents at home.

Although literature is somewhat less explicit about lack of EE ethics in school policies being a constraint to EE implementation, Karodia (2010) and Mohamed (2012: 241) suggested that EE may be incorporated into Muslim schools’ curricula holistically via the schools’ environmental mission statements (see Chapter 3:3.5). Therefore, those Muslim schools that do not have a code of environmental ethics need to establish a clear framework for the introduction of codes of good practices toward the environment. Those schools that do have ethical policies toward the environment, but in which such policies are not implemented, need to think of practical ways to ensure that this policy is put into practice within their contexts. A significant number of participants identified time as a major impediment to EE implementation. The next section focusses on this limiting factor.

#### **6.3.5.4 Time and space for the implementation of Environmental Education**

Lack of time is an important constraining factor for the implementation of EE in Muslim schools (Chapter 5:5.7). Some teachers complained that time was being exhausted by certain demands of their profession such as syllabi completion, administrative and professional duties. However, this finding is not unique to the participating schools because literature also cited the inadequate availability of time as the most common constraint to EE implementation (Kimaryo, 2011:136; Maila, 2003:8; Maluleke, 2015:07; Raselimo & Wilmot, 2013:11). Therefore, there should be ways in which schools create time for the implementation of EE.

In addition, the unavailability of physical space to implement EE beyond the classroom was another constraining contextual factor in some participating schools. The insufficient and concrete physical space in some schools is a noticeable constraint for the implementation of EE. The physical space impeded activities such as tree-planting, designing vegetable patches and natural ecosystems in schools. Furthermore, hosting special events such as Arbour Day are difficult to initiate where space is insufficient. This is one finding on which literature reviewed for this study was found to be silent.

#### **6.3.5.5 Community-based initiatives for Environmental Education implementation**

Awuah-Nyamekye (2012: 87) stresses the significant role that EE assumes in creating a consciousness about environmental issues among communities. Also, the Qur'aan (28:77) encourages Muslims to support charity drives. Many participants in this study mentioned that their schools have embarked upon on charities such as "Winter-warmth" that are mostly related to the socio-economic dimension of the environment. However, these initiatives are not meaningfully related to the global bio-physical concerns of the environment such as climate change, global warming and wildlife preservation and did not feature on the school year plan or calendar of these schools (Chapter 5:5.8).

#### **6.3.5.6 The national curriculum and the implementation of Environmental Education**

Four factors were found in this study to be constraints related to the national curriculum towards the EE implementation. Firstly, many participants complained that the national curriculum (CAPS) is not clear enough about how EE should be integrated in certain subjects such as Mathematics and Accounting (cf. Kimaryo's 2011). Therefore, participants regarded this lack of clarity as an impediment to the holistic implementation of EE through those subjects.

Secondly, some participants maintained that they have not been adequately trained to implement EE in the subject that they teach. Lack of training for EE implementation in Muslim schools somewhat contradicts the findings of Tuncer, *et al.* (2005) who posit that privately-managed schools have a greater access to funds and resource materials

to support EE implementation. Therefore, these funds may also be utilised for teacher training programmes related to EE implementation.

Thirdly, the study also found that many teachers are not able to correctly interpret the contents of the curriculum in a way that would support their efforts to integrate EE in their subjects. Therefore, the conclusion drawn from this finding is that in order for teachers to implement EE, such teachers need to be skilled and innovative (cf. Maluleke 2015:108).

Fourthly, the debate, about whether EE should be a separate subject or not, was found to be still prevailing in the participating schools. Although literature suggests that there is no universal approach to EE implementation, yet implementing EE as a separate subject has been criticised as being against the principles of EE as stated in the Tbilisi Declaration (Kimaryo 2011:34). Hence many EE authors (such as Kimaryo, *ibid*; Radeiski, 2014:11; Varvaro, 2015; Wals, *et al.*, 2014:584) argue for the cross-curricular approach as being more holistic. These authors also maintain that if the environment is regarded a cross-curricular entity, then the approach to learning about it should also be cross-curricular. While some participants in this study seemed to have a contrasting opinion from what literature suggests, arguing that separating EE as a subject would result in special time being devoted to teaching and assessing learners on EE topics, the majority of participants are more comfortable with the integrated and holistic approach. They argue that the integrated approach ensures a continuous and life-long EE across all subjects. The next section focuses on how EE in Muslim schools is conceptualised according to the requirements of the Qur'aan and the CAPS document.

### **6.3.6 Conceptualisation of Qur'aanic principles and Environmental Education implementation**

In this study, the Islamic principles of cleanliness and respect were found to be the primary bases employed for facilitating EE during lessons because these two aspects were strongly emphasised in the Qur'aan (see Quraan, 05:07; 22:32). Furthermore, participants indicated that they used the environment, which is described by the Qur'aan (22:32) as a sign of the power of Allah, as a means to sensitise their learners to global

environmental concerns. In addition, these participants tried to incorporate Qur'aanic verses and the Ahaadith (Prophetic wisdom) into those lessons that have an environmental focus within them. Therefore, the integration of Islamic concepts when implementing EE can be considered as a factor that enabled the quality of EE implementation in Muslim schools. The next section is dedicated to presenting the implications of the findings from this study as discussed above.

## **6.4 IMPLICATIONS OF RESEARCH FINDINGS**

Having presented the research findings in Chapter 5, summarised and discussed them in the preceding sections, in this section, the findings are interpreted in order to address the last two research questions of this study.

These questions were, respectively:

- *How can the constraining factors be addressed to allow the implementation of EE in the selected Muslim schools in Gauteng?*
- *How can the enabling factors that allow for the implementation of EE be sustained in the selected Muslim schools in Gauteng?*

Starting with addressing the constraining factors, the study identified constraints for EE implementation from EE policies and practices in Muslim schools. These constraints include the lack of time to implement EE, the inadequate training of teachers on EE implementation and the insufficient resources for EE implementation. These constraints imply that Muslim schools need to align their EE policies and practices to be able to attend to these issues.

Firstly, as indicated in the discussion above, many teachers that participated in this study were not well informed about the environment, the dimensions of EE and EE implementation. As such they acknowledged the need to undertake in-depth training in environmental literacy and EE implementation. This finding implies that the background knowledge that teachers in Muslim schools should have from the Islamic principles and values is not sufficient to inform them about the environment, EE and EE implementation in those schools. Therefore, there is a need for Muslim school teachers to be professionally trained in these areas in which they lack knowledge. Without such

training, the implementation of EE according to the requirements of CAPS may not be successful. It is thus recommended that there should be regular EE workshops on the methods of integration and implementation of EE especially in those school subjects (such as Mathematics) that do not have an environmental focus within them. Such workshops could also focus on the methods in which EE may be implemented in extra-curricular activities. The various education departments in conjunction with the various Muslim school boards and the EE departments of the different tertiary institutes may plan joint projects focused on ways that teachers can implement EE in and beyond their classrooms. It is assumed in this study that the information that teachers have from the principles of the Quraan should be regarded as a strong foundation on which the training of teachers can be based.

With regards to EE curriculum policy, there is a need for Muslim school teachers to undergo training in curriculum interpretation of EE, EE literacy and also be trained in the usage of resources for EE implementation. This training should be done not only for teachers in certain subjects (such as Life Sciences, Geography and Natural Sciences) but for all teachers because the National curriculum policy advocates for EE across curriculum.

Participants also stated that the subjects that they teach do not have enough resources to support them in implementing EE. This situation was regarded as a constraint and it implies that Muslim schools need to provide quality Learning-Teaching Source Materials (LTSM's) at their schools. Some of the participants categorically stated that their schools had no access to technology and media such as video-clips and smart-board technology. Accordingly, the majority of Muslim schools, considering their financial statuses as suggested in literature, are able to provide such materials.

Another constraint identified in this study was the lack of time to implement EE holistically. As discussed in Chapter 6 (6.3.2.5), many participants complained about having insufficient time to implement EE. In chapter 1 (1.2), the mechanics of a typical school day at a typical Muslim school was analysed. It was discussed that all the participating schools offered a slightly different curriculum. In addition to implementing the National Curriculum (CAPS), schools also offered extra subjects in the Islamic

Sciences. On average, 17 subjects are taught in 62 periods in the FET phase. Therefore, the shortage of time for EE implementation is a valid factor in Muslim schools when considering this number of subjects offered. Hence a strategy would be to extend the school-day so as to incorporate more quality EE implementation into the school practices.

Another constraint identified was the exclusion of codes of ethics in the school policies in relation to EE. The Qur'aan, which is unanimously regarded by all Muslims as the primary source of all Islamic ethos, encourages Muslims to develop a clear code of environmental ethics. Moreover, these ethics need to be implemented in all Muslim organisations and institutions, among which, Muslim schools are part of. Therefore, this study suggests that these schools should revise their codes of ethics to accommodate EE in those documents.

Concerning the manner in which the enabling factors for EE implementation may be sustained, the conclusions drawn from the findings are that Muslim schools need to identify EE-related issues that are common to their contexts and work collaboratively to implement EE in the schools. This networking and collaboration is possible considering that the schools have forums in which they discuss other issues except for environmental issues. What is needed is for agendas of such forums to include environmental issues and ways of implementing EE.

Another way in which the good practices of EE implementation can be sustained is for those schools that do not have eco-clubs to establish such. Findings from this study show that the eco-clubs of participating schools are enabling the holistic implementation of EE via their whole school developmental programmes such as Arbour days and recycling programmes.

## **6.5 CONTRIBUTIONS AND LIMITATIONS OF THIS STUDY**

As indicated, this study contributed knowledge in the field of EE in relation to the factors experienced by teachers as enabling or constraining the implementation of EE in Muslim schools. Thus, the study succeeded in finding information that addresses the research question relating to the experiences of teachers in Muslim schools about the



implementation of EE. The study even identified gaps in EE literature in relation to, for example, the effect of the physical school surroundings on the possible EE implementation practices. Although scholars mention the lack of resources as a constraint to EE implementation (see Carvello, 2009:55; Kimaryo, 2011:139; Maluleke, 2015:07; Raselimo & Wilmott, 2013:11; Varvaro, 2015:51), not many scholars specify physical space among those resources. This study regards this silence of literature as a significant gap in EE implementation and to which knowledge was generated during the process of this study.

The study also identified that literature related to EE implementation in Muslim schools in South Africa are limited, a situation that implies that there is little research that is directly related to EE implementation in Muslim schools. Scholars such as Fataar (2003), Karodia (2010), Khan (2009) and Mohamed (2012) have alluded to some of the EE practices in Muslim school contexts indirectly in their research. Therefore, this study has contributed knowledge on this gap even though the study's sample was not inclusive of all Muslim schools in the province, a situation that is regarded as a limitation for the study. Therefore, it is the recommendation of this study that there be more in-depth research undertaken in other schools in the province and beyond.

The school principals were also (for unknown personal reasons) not prepared to be interviewed. It was hoped that their perspectives on EE implementation would have contributed positive insights into this study. Thirdly, due to ethical reasons, interviews as well as field observations were only audio-taped and not video-recorded. Perhaps a video recording would have also allowed for a richer description of the context of this study.

## **6.6 CONCLUSION**

This study has presented a descriptive analysis of the experiences of teachers regarding the implementation of EE in the selected Muslim schools in Gauteng. It has also argued for the need for teacher training in relation to EE as well as the need for the development of a framework for Islamic ethics in the implementation of EE in Muslim schools. Moreover, the study has presented these arguments by drawing on the various factors existing in Muslim schools that constrain and enable EE implementation. By

examining the enabling factors related to EE implementation, the study hopes to provide directives for Muslim schools and other similar faith-based schools both locally and nationally who wish to implement EE holistically within their contexts. It is also hoped that the descriptions of the constraining factors will also provide guidelines to school managers (both Muslim and other) in their planning stages for EE implementation.

The Muslim school is an important institute in Muslim communities and may therefore be an invaluable role-player in the dissemination of environmental awareness and the generation of practical solutions to global environmental problems. Therefore, Muslims need to collectively create an environmental awareness in their community through their various institutions and forums. Muslims have also been encouraged in the Qur'aan to show care and be concerned about global environmental issues (see Qur'aan 28:77). These ideals may only be possible if Muslim schools find a way to begin to work co-operatively with each other and find common ground regarding EE implementation in their schools.

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### **TRANSLATED WORKS**

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## **APPENDIX A: INTERVIEW GUIDE**

- What is your understanding of the term environment?
- What is your understanding of the concept Environmental Education (EE)?
- How does your personal religious beliefs inter-relate with your understanding about the environment and EE?
- What are your personal views about curriculum policies that require EE to be integrated across all school subjects?
- How is EE implemented in your school?
- What challenges do you usually encounter with implementing EE in your school?
- What, in your opinion, are the reasons for these challenges?
- What can be done to address these challenges?
- If you encounter no challenges, what, in your opinion, are the reasons for your school to be successful in implementing EE?
- What can you suggest should be done to ensure the sustained implementation of EE at your school?
- Were there any community-based projects related to EE- awareness initiated by your school? Please elaborate.
- Does your school have an eco-ethic? If yes, how does it work? If no, why is it not there?
- Is there a need for EE to be driven in Muslim Schools? Please explain
- Is the management of the school supportive of EE implementation? Please elaborate.

- How does the Islamic curriculum and ethos being implemented in your school interconnect to, or relate with, the principles of EE?
- How can your school assist other schools that are not currently implementing EE?

## APPENDIX B: OBSERVATION TOOL

| <b>A) OUT-DOOR PHYSICAL ENVIRONMENT OF THE SITE:</b>   | <b>Yes/No</b> | <b>Comments</b> |
|--|---------------|-----------------|
| Describe the maintenance of the sites physical environment in terms of cleanliness and physical appearance                                     |               |                 |
| Is there evidence of environmental care in the form litter/waste management at the site?   |               |                 |
| Does the site have a garden/vegetable patch?   |               |                 |
| Does the site make provision for the recycling of glass, paper, metals etcetera?   |               |                 |
| Is the adequate physical space on the site to accommodate for activities related to EE such as Arbour Day?                                     |               |                 |
| Does the site support energy conservation by using energy-efficient products such as energy-saving globes, solar powered geysers?              |               |                 |
| Do the natural aspects of the bio-physical environment (such as plants) found at the site complement its man-made aspects (such as buildings)? |               |                 |
| Is there evidence of activities related to EE such as environmental projects/ environmental information on notice boards found at the site?    |               |                 |
| Does the physical nature of the site allow for the facilitation of field-trips?  |               |                 |
| <b>B) CLASSROOM ENVIRONMENT OF THE SITE:</b>   |               |                 |
| Describe the physical appearance/maintenance of the classrooms in terms of tidiness  |               |                 |

|  |  |  |
|--|--|--|
| Is the furniture used in the classrooms made from recyclable material?   |  |  |
| Are there energy-saving globes used in the classrooms?   |  |  |
| Are there any posters related to EE displayed in classroom notice boards/walls?  |  |  |
| Does the classroom atmosphere promote a general sense of environmental care by having pot-plants, fish tanks, books related to EE? |  |  |
| Are there evidences of the promotion of Islamic environmental ethics found within the classroom?                                   |  |  |
| <b>C) POLICIES AT THE SITE:</b>  |  |  |
| Does the site support EE and environmental ethics in terms of its policies such as its Code of Conduct?                            |  |  |
| Does the site promote Islamic environmental ethics within these policies?  |  |  |
| Are there any evidences found on the site that illustrates this promotion?   |  |  |
| <b>D) EXTRA-CURRICULAR ACTIVITIES AT THE SITE:</b>   |  |  |
| Does the site support extra-curricular activities related to EE?   |  |  |
| Is there evidence of this support found on the site?   |  |  |
| Describe some of these extra-curricular activities showing their relationships to EE.  |  |  |
| Does the site have an eco-club?  |  |  |
| Is this club functional?   |  |  |
| Describe the role that the eco-club has assumed to facilitate EE within and beyond the site.                                       |  |  |

## APPENDIX C: ETHICAL CLEARANCE CERTIFICATE



### Research Ethics Clearance Certificate

This is to certify that the application for ethical clearance submitted by

**Il Suliman Mohammed [36702986]**

for a M Ed study entitled

**Investigating the practical implementation of environmental education at  
Muslims schools in Gauteng**

has met the ethical requirements as specified by the University of South Africa  
College of Education Research Ethics Committee. This certificate is valid for two  
years from the date of issue.

Prof KP Dzvimbo  
Executive Dean : CEDU

Dr M Claassens  
CEDU REC (Chairperson)  
[mcdtc@netactive.co.za](mailto:mcdtc@netactive.co.za)

Reference number: 2014 JUNE /36702986/MC

19 JUNE 2014



## APPENDIX D: LETTERS OF CONSENT

### LETTER OF INFORMED CONSENT: SGB

Respected Chairman of School Governing Board

My name is Idrees Iqbal Suliman Mohammed. I am currently completing a Masters degree (M Ed) in Environmental Education at Unisa. My field of research is Environmental Education in Muslim Schools. I intend to investigate the extent of the practical implementation of Environmental Education in Muslim Schools in Gauteng. Your institute has been selected as a research site for this study.

I would hereby like to extend an invitation to your school to participate in my study. As a participant in this study, you are humbly requested to avail three educators teaching at the school, for an interview with myself. The interview would last for approximately 30 minutes to an hour. These educators will be interviewed individually.

The aforesaid educators' participation in this study would be completely voluntary. Also their right to privacy, confidentiality and remaining anonymous is fully guaranteed. At any time during the study, should they wish, they would have the right to withdraw from the study without being subject to any penalty. You are also free to ask any questions regarding the nature of the study and your school's participation therein.

The person in charge of the supervision of this study is Ms N Madiya (Department of Science and Technology Education, Unisa) and can be contacted on the following numbers:

(012) 429 4698

(083) 768 9908

Email: [madiyn@unisa.ac.za](mailto:madiyn@unisa.ac.za)

Kindly take note that I have received the approval of ethical consent for this study from Unisa.

My contact details are:

0722011539

Email: [idreessmohammed@gmail.com](mailto:idreessmohammed@gmail.com)

I sincerely trust that your school's participation will in this study will be of much value and benefit to the field of environmental education.



Idrees Iqbal Suliman Mohammed

Hons B Ed (Environmental Education)-Unisa Student No. 36702986

## **LETTER OF INFORMED CONSENT: PRINCIPAL**

Respected Principal

My name is Idrees Iqbal Suliman Mohammed. I am currently completing a Masters degree (M Ed) in Environmental Education at Unisa. My field of research is Environmental Education in Muslim Schools. I intend to investigate the extent of the practical implementation of Environmental Education in Muslim Schools in Gauteng. Your institute has been selected as a research site for this study.

I would hereby like to extend an invitation to your school to participate in my study. As a participant in this study, you are humbly requested to avail three educators teaching at the school, for an interview with myself. The interview would last for approximately 30 minutes to an hour. These educators will be interviewed individually.

The aforesaid educators' participation in this study would be completely voluntary. Also their right to privacy, confidentiality and remaining anonymous is fully guaranteed. At any time during the study, should they wish, they would have the right to withdraw from the study without being subject to any penalty. You are also free to ask any questions regarding the nature of the study and your school's participation therein.

The person in charge of the supervision of this study is Ms N Madiya (Department of Science and Technology Education, Unisa) and can be contacted on the following numbers:

(012) 429 4698

(083) 768 9908

Email: [madiyn@unisa.ac.za](mailto:madiyn@unisa.ac.za)

Kindly take note that I have received the approval of ethical consent for this study from Unisa.

My contact details are:

0722011539

Email: [idreessmohammed@gmail.com](mailto:idreessmohammed@gmail.com)

I sincerely trust that your school's participation will in this study will be of much value and benefit to the field of environmental education.



Idrees Iqbal Suliman Mohammed

Hons B Ed (Environmental Education)-Unisa Student No. 36702986

**LETTER OF INFORMED CONSENT : EDUCATOR PARTICIPANT**

Respected Educator

My name is Idrees Iqbal Suliman Mohammed. I am currently completing a Masters degree (M Ed) in Environmental Education at Unisa. My field of research is Environmental Education in Muslim Schools. I intend to investigate the extent of the practical implementation of Environmental Education in Muslim Schools in Gauteng. Your institute has been selected as a research site for this study.

I would hereby like to extend an invitation to you to participate in my study. As a participant in this study, you are humbly requested to avail yourself for an interview with myself. The interview would last for approximately 30 minutes to an hour. There will also be two other educators from your school involved in this study, however, they will be interviewed individually.

Your participation in this study would be completely voluntary. Also your right to privacy, confidentiality and remaining anonymous is fully guaranteed. At any time during the study you also would have the right to withdraw from the study without being subject to any penalty. You are also free to ask any questions regarding the nature of the study and your participation therein.

The person in charge of the supervision of this study is Ms N Madiya (Department of Science and Technology Education, Unisa) and can be contacted on the following numbers:  
(012) 429 4698  
(083) 768 9908  
Email: [madiyn@unisa.ac.za](mailto:madiyn@unisa.ac.za)

A copy of the transcribed interview held with you, will be given to you for verification purposes. I have received the approval of ethical consent for this study from Unisa.

My contact details are:

0722011539

Email: [idreessmohammed@gmail.com](mailto:idreessmohammed@gmail.com)

I sincerely trust that your participation will in this study will be of much value and benefit to the field of environmental education.



Idrees Iqbal Suliman Mohammed  
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