CHAPTER 2

THEORETICAL CONSIDERATION AND REVIEW OF RELATED LITERATURE

“We do not inherit the earth from our ancestors, we borrow it from our children.”
~ Native American Proverb

2.0 Introduction

Review of related literature and research studies enables the research student acquire more information and facts related to the research topic and helps him/her to understand paradigms and perspectives of other investigators which may further assist in the planning of the study, selection and development of the tools for the data collected. Research reviews also help an investigator develop proper techniques for analysis and interpretation of the data. Good, Barr, and Scates analyse the purpose of research review as:

- To locate the data useful in interpretation of results
- To suggest methods of research appropriate to the problem
- To show whether the evidence already available involves the problems adequately without further investigation
- To provide ideas, theories, explanation or hypothesis valuable in formulating the problem
- To contribute to the general efforts of the investigator.
The nature of the research questions posed in Chapter I deal with the impact of Environmental Education as taught in the different courses of the University of Mumbai on various perspectives such as the teaching process, student learning and the changes in the social behaviour of people. In order to conduct this study the investigator has carried out an analytical survey of literature related to five major areas of consideration.

1. Need for Environmental Education
2. Goals of Environmental Education
3. Models of Environmental Education
4. Nature and Indian lifestyle and
5. Implications for the research study on hand

For the purpose stated above, besides books, monographs, articles from peer-reviewed educational journals, articles from leading newspapers were also reviewed. The review covers a plethora of issues such as importance of Environmental Education in schools and colleges, major local and global environmental issues, definitions of Environmental Education and opinions of practitioners and researchers in the field of Environmental Education. Moreover, the present chapter contains reviews of books on research methodology. A detailed study of several textbooks on Environmental Education for higher courses as prescribed by the University of Mumbai too has been included. Further, documents and Government Resolutions on Environmental Protection and Preservation Policies as well have been studied and included in the review.

2.1. Need for Environmental Education

A Palestinian teacher writes, “The cardinal value in any ecological approach in education is a sense of responsibility towards nature, self, others and future
generations” (Fasheh, 2002, 46). Due to issues of globalisation, constant development, depletion of water quality and the degradation of the world’s ecosystems countries are coming together to educate themselves and others on the aspect of the environment. “Thus, cross-cultural communication gains a special significance in the comprehension of environmental degradation and the identification of environmental solutions” (Marouli, 2002, 35).

2.1.1 The Global Challenge

In the late 1700’s and early 1800’s, Industrial Revolution brought about major changes in Great Britain, parts of Europe, as well as North America. Before the revolution, people and animals had to do all the work but the Industrial Revolution initiated machines to provide the energy to do most of the work. During this time coal and other natural resources were widely used in the industries, which meant more goods could be produced. Due to the increased use of coal and other forms of energy, high amounts of pollutants were emitted into the air and more and more natural resources were exploited for production purposes. This mindless depletion of the natural resources due to widespread industrialisation and pollution of Earth’s air, water, and soil posed a threat both to human health and the environment. Environmental concerns began to emerge due to the enormous technological growth and its applications resulting in drastic transformation of the environmental situation.

“Understanding global environmental issues and taking action to confront them are challenges that need to be addressed not only by educators but also by planners, economists, policy makers, natural and social scientists, and the general public” (Heimlich, 2002, 17). The question is what makes up Environmental Education? Many educators believe that Environmental Education is confined to the study of science. Although much of Environmental Education is science-oriented, “Environmental Education is cross disciplinary
or trans disciplinary; it must include all studies – history, philosophy, economics, the sciences, mathematics, the arts, citizenship, and social studies – for after all, a decision on an environmental issue requires all facets of society to be considered” (Heimlich, 2002, 25). Today the need for Environmental Education concerns the globe and there are several sources of literature that help support this theory. Environmental Education spans the globe in both formal and informal ways of teaching.

Kamel wrote an essay (2002) with the title *Ecological Education in the Living Environment*. In his essay he has addressed the question, “What does an ecological approach to education mean?” (Kamel, 2002, 22). He addresses the ecological education in Egypt by saying, “In our view, an ecological approach to education implies adopting an approach that is cognizant of both the physical and natural environment as well as the social and cultural environments” (Kamel, 2002, 22). A Palestinian teacher writes, “The cardinal value in any ecological approach in education is a sense of responsibility towards nature, self, others and future generations” (Fasheh, 2002, 46).

In the United States, environmental educators have been trying to introduce Environmental Education as an important subject to be taught in schools from primary to secondary levels. “The need to develop education programs that enable student citizens to acquire a universal environmental ethic has been recognized both nationally and internationally” (Engleson & Yockers, 1994, 14) With the issues of globalisation, constant development, decreasing water quality, and the degradation of the World’s ecosystems, countries are coming together to educate themselves and others on the aspect of the environment. “In a nut-shell, the ever-increasing threats to the resources of the Earth and to the health and stability of its societies, justify an urgent need for an informed global citizenship” (Palmer, 1998, 35).
The supporters of Environmental Education believe that although the benefits of Environmental Education have been known for a long time, there has not been enough evidence that Environmental Education can be helpful in improving student learning. A group of several State, non-profit, business and educational organisations in Washington State, known as the Environmental Education Consortium (EEC), started a project that aimed to prove the benefits of Environmental Education and integrate it into Washington school curricula. The aim of the research was to study the impact of Environmental Education programs on student achievement in traditional subjects such as mathematics, reading and writing.

2.1.2 The Challenge for India

India has a population of 1.22 billion (indiaonline.com), low literacy and high poverty levels. A mega biodiversity ‘hotspots’ of the world with over 127,000 species and a variety of flourishing natural habitats, India’s growing human dependence on its rich biodiversity and depleting resources is proving to be its nemesis. With better nutrition and health care the life expectancy at birth which was a mere 24 years at the turn of the last century and 34 years at independence in 1947 is today close to 70 years. While the population has grown three times over the past fifty years, industrial production to match the increasing demands of the people has grown about 15 times since independence. Carrying 16% of the world's population and possessing only 2% of its land, the exertion of ‘development’ has put great pressure on India’s resources.

Realising that developmental programmes could not succeed without protection of the environment, Prime Minister Smt. Indira Gandhi in 1972 had launched the World Conservation Strategy in India stating, “The Indian tradition teaches us that all forms of life, animal and plant are so closely linked that disturbance
in one gives rise to imbalance in the other.” The National Policy on Education, 1986 (NPE) states that the “protection of the environment” is a value which along with certain other values must form an integral part of the curriculum at all stages of education. The policy states, “There is paramount need to create a consciousness of the environment. It must permeate all ages and all sections of society, beginning with the child. Environmental consciousness should inform teaching in schools and colleges. This aspect will be integrated in the entire educational process.”

2.2 Goals of Environmental Education

Organised global efforts expressing concern for the environment started with the First United Nations Conference on Human Environment held at Stockholm in June 1972. Consequently, United Nations Environmental Programme (UNEP) was formed and International Environmental Education Programme (IEEP) was launched by United Nations Educational, Scientific and Cultural Organisation (UNESCO) and UNEP in January 1975. According to the European Resolution on Environmental Education which has been taken as a basis for many Environmental Education programs, the goals of Environmental Education are, ‘to increase the public awareness of the problems which exist in this field, as well as possible solutions and to lay the foundations for a fully informed and active participation of the individual in the protection of the environment and the prudent and rational use of natural resources.’

(Giolitto et al. 1997, p. 37). Giolitto et al. (1997) drew the conclusion that the four major goals of Environmental Education are as enumerated below.

- Transmission of knowledge
- Creation of new behaviour patterns
• Development of values, attitudes and skills necessary to protect and improve the environment and
• Development of awareness of the necessity to protect the nature and the environment and of the complex interactions between man and nature.

2.2.1 Transmitting knowledge

In 2001-2002 the Washington State Environmental Education Needs Assessment (WSEENA) was conducted by the Washington State Office of Environmental Education (WSOEE) at the Washington State Office of the Superintendent of Public Instruction (WAOSPI) to assess the status of Environmental Education in public schools in the state. 514 respondents (or 74%) said that they were aware that Environmental Education could be used as a tool for improving student achievement and were either currently using Environmental Education (40%) or would like to use it (34%) for this purpose. According to the study the most common use of Environmental Education in schools is to teach students about the natural world (91%) and to develop scientific knowledge and skills (80%) as well as to develop students’ awareness of how actions affect the environment (85%) (McWayne and Ellis 2003).

2.2.2 Creating Citizens of the World

Educators and researchers are of the view that educating citizens who actively protect the environment, and feel it their moral responsibility to do so, is one of the main goals of Environmental Education (Hinesetal.1986; Hoody 1995; Hungerfordetal. 1980; Moody 1994, Stappetal.1969). “The goals of Environmental Education include helping students to be knowledgeable and skilled thinkers who are able to put their knowledge, skills, and creativity to work solving problems, who are practiced at working collaboratively and independently and who are prepared to take their role as responsible citizens” (Heimlich, 2002). Environmental Education should reach citizens of all ages
and help them understand how to play an effective role in solving global environmental problems.

2.2.3 Evolving Environmental Ethics

Review of several research papers establishes the fact that environmental ethics is a necessity both nationally and internationally. In the process of acquiring Environmental Education individuals should not only gain awareness of their environment but also acquire knowledge, skills, experiences and the determination to act as citizens as well as professionals to solve present and future environmental problems. In addition to providing technical expertise and skills to solve particular environmental problems, Environmental Education should also enhance critical thinking, problem-solving, and effective decision-making skills and teach individuals to weigh the various sides of an environmental issue in order to make informed and responsible decisions.

2.2.4 Developing Knowledge of Environmental Systems and Processes

As mentioned in NAAEE’s Excellence in Environmental Education-Guidelines for Learning (K-12), Environmental Education should help learners to develop questioning and analysis skills, knowledge of environmental processes and systems, skills necessary for understanding and addressing environmental issues (such as decision-making, investigation, and citizenship skills) and personal and civic responsibility (NAAEE 1999).

2.3. Models of Environmental Education

An effective model of Environmental Education implementation was needed to achieve all the above mentioned goals.
2.3.1 A 3-dimensional model of Environmental Education by Palmer (1998)

The 3-dimensional model suggested in 1974 by the Council of Schools in the UK was one of the first attempts made in Europe to come up with an effective model of Environmental Education. This model was implemented and later published by Lucas (1979). As mentioned by Palmer (1997, 1998) Sterling and Cooper (1992), Uzzel (1999) and others, there are three components in the model, which are used for Environmental Education organisation and planning. They are education About, For and Through /In/From the environment (Fig 1). According to Palmer (1997-1998), the model consists of formal and informal education both of which include the three above-mentioned components.

![Figure 2: A 3-dimensional model of Environmental Education by Palmer (1998)]
Formal education **About** the environment has an empirical character. It aims to develop knowledge about nature and natural systems using research activities and helps to create an understanding of the environment, its values and the complex interactions of the elements of the natural and human systems.

Education **For** the environment reflects the ethical element of Environmental Education. The emphasis is on the development of a personal ethics, sense of responsibility and informal concern for the environment. Education **Through/In/From** the environment treats nature as a tool and resource of the learning process which helps to enhance the skills of investigation and communication and promotes research activities of the learner. This component is part of both formal and informal education.

**2.3.2 A Model of Environmental Education by Giolitto et al. (1997)**

In 1997 Giolitto suggested a static model in which three dimensions to Environmental Education was identified: Cognitive, Ethical and Action. (Fig.2). Enhancing the cognitive dimension means promoting the level of environmental knowledge and skills, which can help one to learn, understand and protect the environment. The ethical dimension assumes the development of values which help in tackling environmental issues. The last dimension of action in Environmental Education includes the development of special behavior patterns and positive attitudes towards the environment.
2.3.3 A Linear Model of Environmental Education by Sterling and Cooper (1992) and A Non-linear Model of Environmental Education by Sterling and Cooper (1992)

Sterling and Cooper (1992) presented two models representing the process through which individuals progress as they become environmentally educated. Both models include all five categories mentioned in the Tbilisi Declaration. The first model is linear (Fig.3).
Figure 4: A linear model of Environmental Education by Sterling and Cooper (1992)

It assumes that the person passes through the stages of Environmental Education in a strict order one by one. But the authors are also of the opinion that a person may go through the stages of the process of acquiring Environmental Education in a different order altogether. A student may complete one or several stages simultaneously. It proves that Environmental Education is more complex and interrelated than the suggested linear model. Thus, Sterling and Cooper (1992) presented another version of the model (Fig. 4) in which all the elements are interrelated and mutually reinforcing.

Figure 5: A Non-linear Model of Environmental Education by Sterling and Cooper (1992)
2.3.4 Elements of Environmental Education by Klimov and Ukolov (1994)

Ukrainian researchers Klimov and Ukolov (1994) suggested yet another model of ecological education according to which the system of ecological education consists of four components: Cognitive, Normative, Values and Action. (Fig.5)

![Diagram of Elements of Environmental Education](image)

Figure 6 : Elements of Environmental Education by Klimov and Ukolov (1994)

The **cognitive** element of ecological education includes understanding the basic knowledge about the interaction of man and the environment, acquiring the ways and means to conserve nature and being prepared with basic understanding to solve environmental problems. The **value** element of ecological education means understanding the values of the environment itself (cognitive, ethical, practical values, etc.), the ability to conduct human activities within the environment and to foresee the possible changes in the
environment as the result of these activities at different levels. The **normative** element takes into account the ethical, aesthetical and ecological norms of the usage of the environment and the behaviour patterns for individuals, groups and society in the environment. The **action** element includes the activities and methods directed toward the development of cognitive, practical and behavioural ecological skills (an ability to evaluate the situation, the choosing of the solution, the development of personal features of the student, etc.).

### 2.3.5 A Dynamic Model of Environmental Education by Palmer (1998)

It is important to state that it was Palmer (1998) who first stated that for holistic development of Environmental Education it is necessary to use not a static but a dynamic variant of the model that takes into account individual peculiarities and personal experiences of students (Fig. 6).

In this model three areas are spheres which rotate constantly. The other difference is that the key element of the model is ‘formative influences.’ This element can become more important than the influence of the formal educational programmes because it represents the combination of personal experience and formal education. Without taking this factor into account it is impossible to develop a sufficient level of knowledge, skills and values which will form environmental ethics and awareness. Although formative influences use the experience of formal educational programs, they exist independently and help in the whole process of Environmental Education.
Figure 7: A dynamic model of Environmental Education adopted from Palmer (1998)
2.4 Status of Environmental Education in the Formal Education System

'Study of status of infusion of environmental concepts in school curricula and the effectiveness of its delivery', is a small component of the India Environment Management Capacity Building Project of the World Bank. "This project was funded by the World Bank through the Ministry of Environment and Forest (MoEF) which felt the need for such a study to be undertaken,” explains Shamita Kumar of Bharati Vidyapeeth Institute of Environment Education and Research (BVIEER), the project coordinator. The Bharati Vidyapeeth Institute of Environment Education and Research (BVIEER), Pune, was entrusted the arduous task of identifying the various shortcomings in Environmental Education in India. The project commenced in October 1999 and was completed in July 2001 and was implemented in 100 schools in each of the eight states of Maharashtra, Goa, Andhra Pradesh, Assam, Jammu and Kashmir, Punjab, Orissa and Uttaranachal.

The Bharati Vidyapeeth Institute of Environment Education and Research (BVIEER) initiated the project by critically analysing the environmental content in more than 1,800 Science, Geography and languages textbooks used in schools all over the country. Their observations reflected certain shortcomings in the curricula. To cite a finding: Geography textbooks generally discussed the importance of the atmosphere, hydrosphere, lithosphere, the greenhouse effect and ozone depletion in detail but failed to link environmental concepts to real life experiences. As a result, students learnt by rote failing to understand the connection of the growing environmental problems with man’s selfish activities and the growing need for environmental protection. The project sought to investigate the barriers in the implementation of effective Environmental Education and suggested methodologies of teaching the subject effectively. Practical, hands-on activities, field experiences, work experiences etc. were suggested as important components of environmental learning.
“The first step was to identify the existing environmental concepts in the school curricula, and we chose the Languages, General Science, and Social Science (Geography and History and Civics) textbooks from all the states of India,” says Kumar. “The concepts were categorised into 108 codes which fall under the sections of **Natural Systems and Resources, Biodiversity, Pollution, Energy, People and Environment and Others**. The parameters for judging the quality of these concepts were: text content, case studies and examples, visuals, activities and questions for each lesson as well as accuracy, relevance to the text, appropriateness to the age group, comprehensiveness, consistency, bias and action links. An assessment of the language used was also included.”

The findings of the BVIEER were not too encouraging. Despite the fact that the Supreme Court has made it imperative for the government to implement an appropriate Environmental Education strategy in the school programme, it has not resulted in any increased concern for the environment. There is **poor infusion of information** towards environmental preservation and real life situations. According to the findings of BVIEER, students study Environmental Education without truly understanding or caring enough for the subject matter.

### 2.4.1 Environmental Education and Student Acceptance

American and European researchers (e.g. Disinger1982; Eagles and Demare 1999; Kamanova *et al.* 1991; Lysenko 1993; Marcinkowski 1987; Nikolaeva 1992, 1993; Sia 1984; Tilbury1994; Uzzel 1999; Wilson 1996; Zelezny 1999, etc.) emphasise that the development of Environmental Education is a continuing process that takes place during the whole life of an individual but the starting point for it is the early years of a child’s life where environmental values and a positive attitude towards the environment are imbibed.
Wilson (1996) identifies two main reasons to begin Environmental Education early in a student’s life. The first reason is that if a student is not helped to develop a sense of responsibility, respect and positive attitude towards nature during his/her childhood, he/she may not be able to form such attitudes later in life. A second reason for beginning Environmental Education during early years is that a student needs healthy positive interactions with the natural environment (Carson 1956; Wilson 1996). Thus, Environmental Education in the early years should focus primarily on young students exploring and enjoying the world of nature under the guidance of adults (Lysenko 1993; Sobel 1991, 1998; Vygotsky 1991). Environmental Education helps to improve the students critical thinking, analytical and inquiry skills as well as to assess knowledge and understanding of environmental concepts, according to Disinger (1982), Environmental Education in non-traditional non-formal settings is more effective than traditional classroom teaching, in changing the environmental behaviour of students.

However, unlike Disinger (1982), Zelezny (1999), believes that interventions in non-traditional settings such as outdoor camps, etc. are less effective because of the short-term nature of most visits. According to the researcher, programmes that target young learners and are longer in duration tend to be more effective in changing environmental behaviour of the participants.

2.4.1.1 ‘From Watershed to Water Faucets’ – a case study

Bruce Martin et al. performed a study to examine the effect of introducing an ethical perspective into their teaching of Environmental Education. The study entitled ‘From Watershed to Water Faucets’ was conducted on school children from the 7-12 grade, at an ELS school located in a city along Colorado's Front Range. The research unit focused on the water body, emphasising on the value
of the watershed to the students as a resource to the community and the surrounding region. The aim of the study was to assess the extent to which students develop certain environmental virtues over the course of a particular learning period. In the end, the results showed that the students tested higher in a pretest in regards to gaining environmental virtue than after their coursework in the post test. The researchers realised that there were a couple of reasons why the results were not what were expected. The first reason could have been that the participants gave a more accurate self-assessment in the post test than in the pretest. Second, the development of virtue, even environmental virtue, is something that occurs over time through a gradual process. This study shows that not all students respond positively to the formal methods of Environmental Education. Sometimes they need to be educated using different methods or informal methods which takes time.

### 2.5 Review of Related Research Studies

The investigator has reviewed several research works carried out on the areas closely related to the present area of study. Reviews of research papers in the field of Environmental Education are also given here.

#### 2.5.1 Study 1.

A thesis presented to The Faculty of the Department of Physical Education and Recreation, Western Kentucky University Bowling Green KY in December 2004.
Title of the Study

Teacher Perceptions of the Impacts of Environmental Education on the Teaching Process and on Student Learning. Investigator: Angela Nicole Castelli

Objectives of the Study

1. What are teacher perceptions of the impacts of Environmental Education on student learning?

   Such impacts included students’ enthusiasm, motivation, and attitudes towards learning. The study also addresses the impact on skills such as thinking skills, language skills and mathematical skills.

2. What are teacher perceptions of the impacts of Environmental Education on the teaching process?

   The study addresses the impacts on teachers such as enthusiasm, lesson planning and design, instructional strategies, as well as scheduling and restructuring of curriculum in the classroom or schools.

Data collection tools for the present study

1. Content Analysis Instrument
2. Interviews
3. Opinionnaire

Methods used for the study

1. Content Analysis Method
2. Survey Method
Findings

1. Environmental Education has helped students take knowledge from a book and associate it with real life.

2. Understanding of the concepts of the environmental problems has also facilitated group work and problem solving as well as visualisation.

3. It has helped students think out-of-the-box and has taught them that there is more than one right answer as long as they can provide an explanation and evidence to support their answer.

4. Environmental Education helped students develop responsibility to the earth and made them realise that their choices can affect the earth.

5. It has helped develop appreciation and awareness as well as critical thinking and skills of how to work in groups. The programmes helped the students make prior connections and understand processes.

6. The teachers feel, “The strength of Environmental Education is that it is interdisciplinary by nature and it strengthens the different content areas when used together” (Personal Communication, April 20, 2004).

7. Teachers get excited because the activities are meaningful and fun and they see the students’ excitement. It works really well when outside people can come in and give the students a different perspective. It allows the teachers to present new things to their students and add to the curriculum.

8. It motivates teachers to be more hands on, more verbal and to present things to their students in different ways.
9. Teachers who have experienced an influence on their instructional strategies seek to participate in more Environmental Education workshops. It gives the teachers the opportunity to bring resources and materials into the classroom to use with their students.

10. Teaching Environmental Education permits the teachers to be more creative.

2.5.2 Study 2

A thesis presented to the faculty of the College of Arts and Sciences of Ohio University, USA in partial fulfillment of the requirements for the degree Master of Science.

Title of the Study


Objectives of the Study

1. To prove that through computers, the World Wide Web especially has become an important technological tool in Environmental Education.
2. Technology can enhance parental involvement, teachers’ skills, school management and perhaps student achievement.
3. Technology in the classroom can promote different types of communication between students and teachers and students, encourage students to use higher-order cognitive tasks and challenge teachers to examine old beliefs about teaching and learning (Dwyer 1994).
Findings

1. The Internet is a realistic means of meeting Environmental Education’s main goal of developing an environmentally literate citizenry (Moore and Huber 2001, NAAEE 1996).

2. The Internet can be a good instructional delivery medium since science-oriented Web sites supply educational activities and facts for a variety of ages (Nachmias and Tuvi 2001).

3. The Internet also allows environmental issues to enter the classroom without delay and provides students an opportunity to further their understanding with the help of networks of students, scientists, citizen groups and government officials around the world (Rohwedder and Alm 1994).

4. Since Environmental Education often begins close to home, the Internet provides learners an opportunity to further explore an environmental issue close to them and not just topics listed in curriculum materials.

5. Last, Environmental Education promotes critical thinking which is also required in the utilisation of technology. When applying the Web to projects, students must choose, categorise, infer and seek out information (EETAP 2000).

2.5.3 Study 3

Research papers submitted in The Path To Success: Some Pioneering Examples of Environmental Education. Institute for Global Environmental Strategies, Japan.

Published by: Center for Environment Education (CEE).
Title of the Research Paper Series

Environmental Education Some Experiences from India (2002).

Published by : Kartikeya V.Sarabhai, Meena Raghunathan, Shivani Jain.

Objectives of the Paper Series

1. To highlight the milestones in the developments in the field of Environmental Education leading to environmental management and conservation of resources in India.
2. To reflect on the kind of environmental challenges India faces and how Environmental Education for children and youth has become an integral and important part of the Environmental Education strategy of India.

Findings

1. Generally within a state, one set of syllabi and textbooks are used. Since environmental concerns are locale-specific in India, global solutions cannot be effective. It is necessary to supplement the efforts at national and state levels with a more intensive locale-specific effort.
2. Environmental Education has been allotted a separate period and is being evaluated. This status of a separate subject helps the course being taken seriously by the teachers and students.
3. Over the years, environmental activities have grown from an exclusive school-based initiative to community based programmes for women and children. Changes are taking place with women taking charge of community property resource management.
4. The Department of Environment was established by the Government of India. In 1983-84, the Department launched a new scheme on
Environmental Education and awareness, under which several activities like seminars, group discussions, refresher courses, multimedia campaigns, eco-development camps etc. to various target groups, such as decision makers, politicians, administrators, teachers, students and general public was undertaken.

5. Government systems and the NGO networks are complementary to each other and a partnership between the two can make Environmental Education more effective. While governments are the policy making agencies, NGOs are often the source of innovations.

6. In India the impact that media, especially the print media exerts on its readers is enormous. ‘Down To Earth’ was launched as a science and environment fortnightly news magazine to bring all information to the policy makers and the public both quickly and accurately.

2.6 Nature and Indian Lifestyle

‘Unity in diversity,’ is not just another phrase or quotation. These words are highly significant for a country like India that is incredibly rich in culture and heritage. The Indian culture has never been rigid and that's why it has withstood the trials and travails of the modern era. Since time immemorial nature has always been revered in India and therefore it comes as no surprise when according to a new study, tracking global attitudes towards consumption and the environment, inhabitants of India and Brazil have the world's most environmentally-sustainable lifestyle.

The survey by the National Geographic Society establishes a "Greendex" -- an index measuring the economic impact of consumer lifestyle choices -- in four key areas: housing, transportation, food and goods. Overall, the survey determined that inhabitants of developing countries are most concerned about the impacts of their lifestyle choices on the environment and thus their lifestyles had fewer adverse effects on the environment than people in
developed countries. The highest scores denoting the greatest environmental consciousness were found in Brazil and India, each tied with 60 points.

How did religion influence or shape our attitude towards the natural environment? This is how UCLA history professor, Lynn White, answered this question in his article *The Historical Roots of Our Ecological Crisis* (Published in *Science* in 1967), “To Hindus, the concept of environment protection is not a modern phenomenon, they inherited it from their ancestors. During the earliest, formative period of their society, Hindus first perceived God's presence around them through nature. The natural forces that governed their daily lives were considered as manifestations of an almighty creator they called the *Brahman*. Ancient Hindus felt *Brahman*'s presence in everything around them. Since these divine forces sustained all living creatures and organic things on this earth, to please God, they felt they must live in harmony with His creation including earth, rivers, forests, sun, air, and mountains.”

Unfortunately today in the process of modernisation and mimicking of western lifestyle and consumerism, modern Indians are forgetting their ancestors' view on ecology and are acquiring the western exploitative attitude towards nature which will prove to be self destructive in the long run. But the researcher strongly feels that true Indianness lies too deeply rooted to be waylaid by this self defeating superficiality of global materialism. Reviving the simple practices of everyday life, showing deep respect for nature and its creations will continue to make India an effectively eco-friendly nation for others to follow. Be it the ‘Surya Namaskar’ wherein we show respect to the sun at the break of dawn or the recital of the ‘*Shanti path*’ to conclude every auspicious ceremony will continue to reflect the Indians’ connectedness with nature. Environmental Education can today act as the much needed bridge connecting environmental conservation and sustainability of human beings.
2.7 Implications for the Present Study

With an underlying need to study the impact of Environmental Education, an investigation of books, public documents, journals and periodicals relating to the need for and goal of Environmental Education, Models of Environmental Education and nature and Indian lifestyle proved to be useful to the researcher and relevant for the present study. Most of the literature reviewed dealt primarily with the ‘quality’ rather than the ‘quantity’ of Environmental Education.

Being a member of the teaching fraternity, the researcher feels the need to assess the impact of Environmental Education on the social behaviour of the students and teachers long after the innovative and participatory methods of teaching have been inducted into the Environmental Education curriculum as suggested by The Bharati Vidyapeeth Institute of Environment Education and Research (BVIEER), Pune.

During the last 40 years the amount of research on Environmental Education has varied from year to year, reflecting the interests of society in environmental problems. Researchers largely believe that Environmental Education leads not only to increased awareness but also to improved environmental behavior (Disinger 1982; Marcinkowski 1987; Sia 1984; Zelezny 1999).

This study has been conducted to determine whether Environmental Education which has been incorporated in the curriculum of higher studies by the University of Mumbai is creating the right impact “to increase the public awareness of the problems which exist in this field, as well as possible solutions, and to lay the foundations for a fully informed and active participation of the individual in the protection of the environment and the prudent and rational use of natural resources” (Giolitto et al.1997, p.37).
The researcher finds that very few research work have been carried in India related to the proposed study. Limited work has been done on the effectiveness of Environmental Education on the school curriculum. Thus most of the studies reviewed by the researcher have been from abroad (USA) conducted primarily on American school children.

As a teacher of Environmental Education, the researcher feels that teachers can take the opportunity to make their classroom teachings more meaningful by either taking the students out to the nature or by bringing nature into the classrooms. An attempt to understand the lacunas in the curriculum and a few innovative strategies employed by teachers to transact the curriculum will help to create enthusiasm, motivation, positive attitudes and skills in the students and help to bring about a sustainable world.

2.8 Conclusion

In this chapter the investigator has reviewed some studies and a series of research papers highlighting the long lasting effects of Environmental Education on the people. The reviews of the studies cited in this chapter reveal that most of the studies related to the present topic are qualitative in nature. The tools extensively used are the questionnaire, interviews, content analysis and observation schedules. The sampling techniques and tools used in the studies mentioned above have given the investigator insights into the methodology aspect of the given study.

This chapter entails the need to study Environmental Education as a subject and the goals acquired after studying it. The different models to study Environmental Education as put forth by various scholars are also discussed in this chapter.
Beside the review of written literature, the internet has been a great source of information to the researcher and has helped her acquire the necessary up-to-date statistical data (For instance, the population of India.) Technology in the form of the internet has been of great assistance to the researcher. The next chapter is about Research Design: Planning and Procedure.

Trees are indeed like good people who themselves tolerate the scorching heat of the sun and give shade to others; even their fruits are for others’ enjoyment.