CHAPTER II

REVIEW OF RELATED LITERATURE

INTRODUCTION

The present research is undertaken to study of environmental awareness and attitude of teachers and students of secondary schools in India and Iran. In this chapter, the researcher presents a brief review of studies done related to environmental awareness and environmental attitude of schools in India, Iran and other countries.

2.1 PURPOSE AND NEED FOR THE REVIEW OF RELATED LITERATURE

Research takes the advantage of the knowledge which has accumulated in the post as a result of constant human endeavour. It can never be undertaken in isolation of the work that has already been done on the problems which are directly or indirectly related to a study proposed by a researcher. A careful review of the research journal, books, dissertations, thesis and other source of information on the problem to be investigated is one of the important steps in the planning of any research study.

A knowledge of related literature enables the investigator to define the frontiers of his field. As one proceeds through the related literature and develops increasing understanding, one may find oneself seeing ways in which the studies can be improved and it helps the researcher in a better position to interpret the significance of his own results. Review of related literature serves many purposes.

(i) It shows whether the evidence already available solves the problem adequately without further investigation, suppose a research worker has selected problem
‘X’ for research and during reviewed of related literature he finds that the problem ‘X’ is already adequately solved by some previous researchers. In such a case there is no point in repeating the study. Review, helps to avoid unnecessary duplication. However in case the researcher is not satisfied with the procedures followed by the previous workers in solving the problem, he is welcome to conduct the study using refined procedures.

(ii) Review also tells the researcher what has been done, found and accepted and what else to be done. Thus it will be of greater help at the stage of finalizing the selection of the problem for research.

(iii) It provides, ideas, theories, explanations or hypotheses valuable in formulating the problem. It is useful in defining the problem in terms of objectives, questions and hypotheses.

(iv) It suggests methods of research appropriate to the solution of the problem, when the researcher review literature in the related field, he will come to know the method of research used by the previous researchers. This helps him to select the appropriate research method for his study. He may initiate, modify, refine, integrate, enrich or innovate suitable method.

(v) It suggests data gathering tools and techniques appropriate for the study. There are many kinds of data gathering tools such as tests, inventories, scales, questionnaires, etc. and techniques such as interview observation, projection, etc. The review helps the researcher to know about the data gathering tools and techniques. Thus review of related literature is quite useful at the stage of selection/construction of tools for data gathering.
(vi) It suggests the statistical techniques appropriate for the analysis of data. Thus review of related literature is useful at the stage of analysis of data.

(vii) It locates comparative data and findings useful in the interpretation of results. In interpreting the results obtained in a study, significant comparisons are made with the conclusions found in related studies, before formulating conclusions and generalizations.

(viii) The material secured from the review of the field makes up one of the early chapters of the research report, which serves to orient the reader. It enriches the report and enhances its value.

(ix) It contributes to the general research competence of the investigator his insights and skill. The investigator develops confidence in planning and conducting research through review. It is thus seen that review of related literature is useful at all the stages of research right from selection and formulation of problem through its planning, implementation, to the writing of the research report.

(x) The review enables the researcher to define the limits of his field. It helps the researcher to delimit and define his problem. To use an analogy given by Ary et al. (1972) a researcher might say: The work of A, B and C has discovered this much about my question; the investigations of D have added this much to our knowledge. I propose to go beyond D’s work in the following manner. Keeping the above points in view, the researcher has made an attempt to review the related literature of the problem in a systematic way.
The review of related literature is an important part of scientific approach and is carried out in all areas of scientific research. This provides the researcher the means of getting to the frontier in her particular field of knowledge. Thus “Review of related literature” is a valuable guide in defining the problem, recognizing its significance, suggesting promising data gathering devices, appropriate study design and source of data. The review of the related literature pertaining to the present study was surveyed by the Investigator and the same is presented in the following pages. The studies reviewed are presented under the following headings.

1. Studies related to Environmental Education in India
   1.1 Studies on Environmental Awareness
   1.2 Studies on Environmental Attitude

2. Studies related to Environmental Education in Iran

3. Studies related to Environmental Education in other countries

2.2 STUDIES RELATED TO ENVIRONMENTAL EDUCATION IN INDIA

Environmental education is one of the most recent advanced and fast growing area of education research. It is observed that major work in the field of Environmental Education has been done since 1980.

In this chapter some of research studies which throw light on the selected problems has been presented. For the purpose of convenience the research studies have been classified under two categories, viz. studies on environmental awareness and environmental attitude.
2.2.1 Studies on Environmental Awareness

Pai (1981) experimented a study in environmental studies taking a group of 152 college students to help them to acquire an awareness, develop positive attitude, develop skills necessary for solving environmental problems and taking preventive measures. The study revealed that

(i) there was a significant difference between the experimental group and the control group on knowledge scores and attitude scores.

(ii) the experimental group gained more than the control group on environmental activities inventory, indicating effectiveness of the curriculum.

Deopuria (1984) made a comparative study of teaching of Science through environmental and traditional approach in schools of Madhya Pradesh. The objectives were to compare the effectiveness of two different approaches in developing environmental awareness, attitude towards environmental education and cognitive achievement in science among students. The study revealed that the environmental group obtained higher achievement scores due to teaching of science through environmental approach.

Shahnawaj (1990) conducted a study on Environmental Awareness and Environmental Attitude of Secondary and Higher Secondary School Teachers and Students in Rajasthan. The study revealed that:

1. it was found that 95% teachers and 94% students possessed positive environmental attitudes.

2. the environmental trained teachers and untrained teachers did not differ in their attitudes.
3. teachers had more awareness of the environment than students.
4. trained and untrained teachers did not differ on environmental awareness.
5. girls possessed significantly more awareness of the environment than boys.

Patel Nanubhai (1995) conducted a study to investigate the environmental awareness of secondary school students in the context of IQ and sex, and also to examine the effect of the environmental study multimedia package on environmental awareness of secondary school students. The study revealed that students with high IQ had increased environmental awareness; the environmental awareness multimedia package was more effective than the traditional lecture method, girls were sensitive about the environmental awareness than boys.

Rou, Sabhlok (1995) conducted a study on awareness and attitude of teachers and students of high school towards environmental education in Jabalpur district. The study revealed that;
(1) the boys and girls differ significantly on their awareness towards environmental problems, in favour of boys.
(2) the rural and urban students differ significantly on their environmental awareness in favour of the urban students.
(3) the male and female teachers did not differ significantly on their environmental awareness.
(4) the male and female teachers differ significantly on their environmental attitudes in favour of female teachers.
(5) the students and teachers differ significantly on their environmental knowledge, in favour of teachers.
(6) The urban teachers and the rural teachers differ significantly on their awareness of environmental problems.

(7) The rural teachers and the tribal teachers did not differ significantly on their environmental awareness, while the urban teachers and tribal teachers differ significantly in favour of urban teachers.

(8) When the urban students and tribal students were compared for their environmental awareness, it was found that, the two groups differed significantly. A similar difference was found between the tribal students and the rural students.

(9) The students studying in government schools and private schools also differ significantly, in favour of the private schools.

(10) When the government school teachers were compared to the private school teachers, they were found to differ significantly, in favour of the former group.

(11) The teachers were compared to parents on their environmental awareness and were found to differ significantly.

(12) When the urban and rural parents were compared it was found that they differ significantly in favour of the former group.

Ummed Singh (1995) developed a video instructional package for creating environmental awareness among secondary school students in Gujarat, Rajasthan and Uttar Pradesh and made a tryout of the instructional package. The study was developmental cum experimental in nature. The study revealed that the developed video instructional package was found significantly effective for the students.
Patel and Patel (1995) conducted a study on investigation into the environmental awareness and its enhancement in the secondary school teachers. The major findings were:

1. It was found that there was a significant effect of environmental awareness programmes as a whole treatment on environmental awareness of the teachers of experimental group.

2. There was no significant difference in the mean score of environmental awareness possessing high and low experience of the teachers.

3. There was no significant interaction between independent factors of environmental awareness programmes and experience upon environmental awareness of teachers.

Prajapat (1996) conducted a study on Effect of Programmes Developing Awareness towards Environmental among the Pupils of Standard IV in Gandhinagar, Gujarat. The study revealed that the;

1. pre-acquired initial environmental awareness played much more role in enhancement of environmental awareness of the pupils of standard IV.

2. programmes developing environmental awareness was an indirect successful means to develop the environmental awareness of the pupils of standard IV.

3. mean effect of the treatment, i.e. of the programmes developing environmental awareness was highly significant with reference to environmental awareness.

4. pupils of experimental group were found with more enthusiasm than the pupils of control group.
5. students from the non-government schools had been affected more by the programmes developing environmental awareness.

6. The most remarkable effect of the programme was seen that the pupils from all the groups were more enthusiastic and zealous towards receiving the education through programmes rather than through the textbooks.

Shabina Jinarajan (1999) conducted a study of environmental awareness and attitude towards environmental education of student teachers in Bangalore city. The study revealed that:

1. Sex has no impact on environmental awareness.

2. Qualification or stream of studies – arts or science chosen by student teachers has impact on environmental awareness.

3. Caste has its effect on environmental awareness of student teachers.

4. Medium of instruction has its consequences on environmental awareness of student teachers.

5. Socio-economic status has its effect on environmental awareness.

6. Sex has impact on student teachers attitude towards environmental education.

7. Medium of instruction has effect on student teachers attitude towards environmental education.

8. Socio-economic status has its consequences on student teachers attitude towards environmental education.

9. Qualification or stream of studies (arts/science) has no impact on student teachers attitude towards environmental education.

10. Caste has no effect on student teachers attitude towards environmental education.
Dinakara (2000) conducted a study of environmental awareness, attitude and teaching practices of elementary school teachers of Mysore district. The study revealed that

1. there is a significant difference between urban and rural school teachers in their environmental awareness.
2. there is a significant difference between urban/rural teachers in environmental attitude.
3. there is no significant difference between urban/rural school teachers in their teaching practices.
4. there is no relationship between environmental attitude and classroom practices.
5. there is no significant difference between the urban and rural school teachers in their classroom practice.
6. there is no significant difference between the government school teachers and private school teachers.
7. there is no significant difference between government and private school teachers in their environmental attitude.
8. there is significant difference between government and private school teachers in their environmental awareness in environmental related topics.
9. there is a considerable relationship between environmental awareness and environmental attitude.

Tripathi (2000) conducted a study on Comparative of Environmental Awareness of Students Studying in Central Schools and Other Schools at 10+ level in Uttar Pradesh. The study revealed that;
1. the difference between boys and girls students of central schools was found to be significant with respect to their environmental awareness. Male students were found significantly higher than girl students.

2. there was significant difference between environmental awareness of science and arts students of central schools. Arts students were found significantly higher than science students with respect to their environmental awareness.

3. there was no significant difference between the students studying in central schools and other schools having same syllabus.

4. there was no significant difference between environmental awareness of the students studying in central schools and other schools having different syllabus.

Vipinder and Jaswinder (2005) conducted a study on environmental education awareness among elementary school teachers.

A total sample of 1800 elementary school teachers was selected using stratified random sampling technique from five districts namely Amritsar, Jalandhar, Kapurthala, Nawanshahar and Gurdaspur. The important conclusions derived from this study are as follows:

Male and female elementary school teachers showed no significant variation in environmental education awareness, thereby highlighting that sex was not the factor affecting environmental education awareness among the school teachers.

The subject specialisation of the school teachers also showed significant variation in environmental education awareness. Science teachers had significantly higher environmental education awareness than their social science and language counterparts.
2.2.2 Studies on Environmental Attitude

Praharaj (1991) conducted a study on Environmental Knowledge, Environmental Attitude and Perception Regarding Environmental Education among Pre-service and Inservice Secondary School Teachers in Puri District of Orissa. The study revealed that:

1. the level of environmental knowledge was found low among pre-service teachers, although conceptual knowledge was moderate.
2. among the inservice teachers, environmental knowledge was moderate and factual knowledge about the environment was low.
3. both the groups differed significantly in their level of environmental knowledge. They had a favourable attitude towards environmental education although the inservice group had a higher level of attitude than that of the pre-service group.
4. there was moderate correlation between environmental knowledge and environmental attitude.
5. teachers perceived that environmental education could be a core part of social science and general science also and science subjects in secondary school as well mass media have a potential role to play in imparting environmental education.

Ananth, Girish (1993) conducted a study on environmental attitudes of 10\textsuperscript{th} standard students of Bangalore City in relation to their sex, socio-economic status and environmental knowledge. The total sample size was 483 of which 310 were boys and 173 girls. An environmental attitude scale and an environmental knowledge test were constructed, having 25 and 91 items correspondingly. Two-way ANOVA, t-test, correlation and regression were used for analysis. The major findings were:
(1) Differences in sex do not account for significant differences in environmental attitudes; (2) Differences in levels of socio-economic status did account for differences in environmental attitudes; (3) There was no significant interaction effects of sex on socio-economic status on environmental attitudes; (4) There was no significant interaction effect of socio-economic status and environmental knowledge, and (5) Environmental knowledge was found to be significant predictor of environmental attitude.

Sharma (1997) conducted a study on Developing a Global Environmental Perspective in the School Curriculum in India. He argues that atmospheric pollution, ozone depletion, and marine pollution are more prominent in the developed world than in developing countries. Emphasizes the need to reorient the India school curriculum from a national perspective to promote global environmental perspectives in diverse subject areas.

Shaila (2003) conducted a study of effect of background variables on the environmental attitude of secondary school teachers in Bangalore city. The study revealed that:

1. there is no significant difference in the environmental attitude of male and female secondary school teachers.

2. there is no significant difference in the environmental attitude of teachers belonging to different types of school management.

3. there is no significant difference in the environmental attitude of arts and science secondary school teachers.
4. there is no significant difference in the environmental attitude of teachers belonging to rural and urban areas.

5. there is no significant difference in the environmental attitude of teachers belonging to different size of secondary schools.

6. there is no significant difference in the environmental attitude of married and unmarried secondary school teachers.

7. there is no significant difference in the environmental attitude of secondary school teachers belonging to joint and unclear families.

8. there is no significant difference in the environmental attitude of secondary school teachers to different size of families.

9. there is a significant difference in the environmental attitude of senior and junior secondary school teachers.

10. there is a significant difference in the environmental attitude of secondary school teachers who belong to high and low socio-economic status levels.

Chethana (2003) conducted a study on effect of background variables on the environmental attitude of 9th standard students in Bangarpet and KGF areas. The major findings were:

1. In this study, the researcher had formulated three major null hypotheses by analyzing and interpreting the data, the researcher has rejected the first null hypothesis, i.e. there is a significant relationship between socio-economic status and environmental attitude.
2. The second null hypothesis was accepted, i.e. there is no significance between the background variable such as locality, sex, type of school management and environmental attitude of 9\textsuperscript{th} standard students.

3. The third null hypothesis was accepted, i.e. different level of socio-economic status does not account for significant difference in the environmental attitude of 9\textsuperscript{th} standard students.

Mercy and Arjunan (2005) conducted a study on Environmental Attitude and Pro-environmental Behaviour among Secondary School Children of Kerala. The following are the major conclusions of the study:

1. A gender difference was noticed with respect to the environmental attitude of secondary school children; boys possess better attitude than girls.

2. A local (rural-urban) difference was also noticed with respect to the attitude of secondary school children towards environment; urban subjects posses better attitude than rural subjects.

3. Comparison of gender groups showed that there is no significant difference between boys and girls in their pro-environmental behaviour.

4. Comparison of locale groups showed that there is no significant difference between rural and urban students in their pro-environmental behaviour.

5. There exist low, but positive significant correlation between environmental attitude and pro-environmental behaviour of the total sample and two sub-samples, viz., girls and rural subjects of the secondary school children; whereas the degree of relationship was found to be positive and substantial in the sub-samples of boys and urban students.
6. There is a significant difference between boys and girls in the degree of relationship between the environmental attitude and pro-environmental behaviour; the relationship being more markedly visible in boys.

7. Rural and urban subjects do not differ significantly with regard to the relationship between environmental attitude and pro-environmental behaviour.

Mercy (2005) conducted a study on Environmental Interest of Secondary School Students in Relation to their Environmental Attitude. The study made use of a representative sample of 624 secondary school students of Kerala, selected on the basis of “stratified random sampling technique”. The sample consisted of 306 boys and 318 girls, the rural and urban representation being 339 and 285 respectively. The following are the major conclusions of the study.

1. The present study found that only a small proportion of the secondary school students have high levels of interest in environmental matters.

2. A gender difference was noticed with respect to environmental interest of secondary school students, boys are more interested in environmental matters compared to girls.

3. A locale (rural-urban) difference was also noticed with respect to the environmental interest of secondary school students; urban subjects having more interest in environmental matters compared to their rural counterparts.

4. There existed high, positive and significant correlation between environmental interest and environmental attitude of the total sample as well as the subsamples based on gender and locale.
2.3 STUDIES RELATED TO ENVIRONMENTAL EDUCATION IN IRAN

The public culture of environmental education in Iran has an ancient history. Traditional beliefs and attitudes were handed down through the generations. Time naturally transformed these teaching from one extreme interference of human kind in the food chain has always been considered as indecent immoral and antithetical. Thus balancing economic with natural resource consumption is a time honoured national custom. Public environment education through government channels has also existed for a considerable. Although we find traces of environmental education among the first official curriculums in this country, such training in the modern sense has existed for only three decades. During this time efforts have been made to integrate environmental issues in the national curriculum and subjects like natural sciences, geography, chemistry and biology are textbook courses. Although these attempts are seen as important steps in national environmental training there is still a long path to be trodden before an acceptable level of environmental education in Iran is achieved. This is the result of insufficient integration among these subjects and the lack of applied fundamental approaches in this field. (Toorani and Karam-al-Din, 2003)

The aims of environmental education is increasing awareness and creating sensitivity in individuals toward alteration made by physical, economic, biological, sociological and political events; upon the environment therefore having identified description of environmental problems, individual can create their own ways of solving environmental difficulties (Badkobi et al., 2001). We have entered the 21st century an era of science and technology. Man has made his life much more comfortable than ever before while doing so, he has destroyed forests, polluted air
and water and disturbed nature’s balance. The rate of extinction of species of animals and plants has been rising. How to avert this catastrophe? The obvious answer is environmental education. We can save our species only when we organise environmental education programmes on a large scale.

Environmental education being important, it is expected that the teachers make the students socially aware of the need for environmental preservation (Ahmadi, 1999). The purpose of environmental education is to improve the quality of environment to create awareness among the people on environment problems and conservation. Finally, people should participate in decision making and develop the capabilities to evaluate the development programme in Iran. Environmental education is an attempt to reorientate education so that environmental competence is restored as one of its basic aims along with personal and social competence (Sadough, 2002).

In many parts of the world, Iran included, one would think the contemporary era would be a period of increasing environmental awareness and greater appreciating of the role of a healthy environment in promotion of the quality of human life. Truth is our time is one of continuous and multifaceted environmental devastation. Yet, given the increasing awareness of human beings towards the importance of the environment, the necessity of planning for proper and sustainable use of resources and other issues related to the environment have opened new avenues for presenting fresh theories and comprehensive planning to reduce the devastation. This includes increased output and efficiency of tools and materials and better use of resources. One of the most important views is the notion of sustainable development. In addition, the experiences of diverse human communities make clear the importance and interaction
of local and national issues like environment, culture and region. In utilising other communities’ experiences and technologies, planning for sustainable development and protecting resources, localisation of the planning and programs has been strongly recommended. Many factors play a role in the success of schemes in which human resources are considered a key factor. Thus achieving sustainable development requires proper planning to promote awareness at different managerial levels involving the public and experts (Naghizadeh, 2001). At the threshold of the third millennium a primary concern of international organisations and the scientific community are environmental problems and their increasingly negative trends. The human being is viewed as both predator and victim in this crisis. To this end research informs us that reversing the environmental crisis depends on reforming human attitudes concerning their fate and natural surroundings. In spite of the many efforts made for developing environmental teaching through formal and nonformal training systems at the national and global levels, the achievements seem limited and insufficient. Investigator points that the dominant approaches and existing training educational strategies need fundamental changes. The ascendant ideas on formal and nonformal training systems seeking to better human behaviour and epistemology and attitudes towards the methodology of teaching namely knowledge and the process of creating knowledge needs fundamental revision. Until current training systems do not after their approaches on concepts and the mechanism of knowledge creation or the nature of human epistemology, we won’t see any change in effectiveness of environmental education and training (Emadi, 2002).
This phenomenon has led Iranian researchers to study environmental awareness and attitude of teachers and students working at different levels of education. Some of these studies are:

Sarmodi (1998) conducted a study on different aspects of environmental education with emphasis on the young generation. In view of the significant role of environmental education and conservation in the present time and the great need for introducing the new generation to these issues, and bearing in mind that these very youth and children of today will run the society of tomorrow, we should undoubtedly attempt to enhance their knowledge and awareness with a real sense of environmental commitment as an obvious goal. Natural history museums, public displays of animals and plants, and taking part in outdoor recreational activities could play significant role in the achievement of this target. Hopefully, these measures will gradually prepare the ground for awakening the youth to the environment and will thus lead to greater development. Obviously, material and methods used to this end should be carefully adapted to the interests and needs of the young generation within the established social and cultural framework of the country.

Kerman (1998) conducted a study on reducing environmental damages, a prerequisite for sustainable development. Development experts always warn that no plan or programme should be worked out in advance unless a long-term reduction in environmental damages are taken into account. This article highlights sustainable development strategies which demand a series of disciplinary regulations for the environment and require international organizations to abide by such regulations. These rules should provide for realistic environmental policies and standards within
the framework of cultural values of nations so as to maintain an elaborated balance between environmental quality and commercial revenues in a long-term perspective.

Sultani (1999) conducted a study on children and the environmental pollutions. The study revealed that 32% of the world population are children. From the ecological and environmental points, children have some specialities which separate them from the other groups of the human society. This paper describes these specialities and also the impacts on children society caused by environmental pollutions during their life time. Furthermore, to support this vulnerable group, the environmental conservation issues is discussing in this paper.

Sanaye (2000) conducted a study on Training Guidelines Imperative for Enhancing Culture of Environment. This paper explicates the role of training in creating a comprehensive, national culture of environment protection. In treating this subject, it first explores the role of industries in sustainable development and then attempts to explain the negative effects of economic development on the environment. The key concepts of training and learning expressed here in represent essential ideas of national and global research. The common thread running through all the material perused makes clear that proper training can change public opinion in both the short and long term. Taken to its logical limits this allows for a given society to become an essential agency in environment protection.

Badkobi and Hadipour (2001) conducted a study on Assessment of Primary School Teachers Educational Condition in Different Zones of Tehran Municipality in Environmental subjects and the ways of elevating their awareness. The aims of environmental education is increasing awareness and creating sensitivity in
individuals toward alterations made by physical, economic, biological, sociological and political events, upon the environment therefore having identified description of environmental problems, individuals can create their own ways of solving environmental difficulties; and gain their own experience in this regard in fulfilling these aims, the need to find their own suitable ways, and use the best system of activities in order to reach them. These create the background for elevating environmental awareness, and approaching towards complete achievement of originally set goals, resulting from extensive research and execution and use of facilities. The aims of present study therefore, is to increase existing conditions of environmental awareness among teachers of primary schools, in greater Tehran municipalities. The study revealed that the:

a. male teachers have more awareness about environmental education.

b. level of environmental awareness of science teachers is more than other subjects.

c. level of environmental awareness of teachers are enhanced with increasing their education level.

Bahrainy and Amini (2001) conducted a study on the role of environmental non-government organizations in citizens participation for environmental conservation in Iran. This research focuses on the role of the environmental non-governmental organizations in Iran and also the evaluation of their performance in achieving public participation to protect environment. Finding of this research reveal that so far these organizations have lacked the ability to prepare the context for people involvement in environmental conservation, which is due to several major constraints.
Political, legal and judiciary factors have been the major obstacles against the establishment and smooth activities of these organizations. A few organizations which have overcome the difficulties and began their activities, have not been able to make significant impact on protecting the environment. Lack of experience, both in organization and people, were another factor in limiting the success of these organization in Iran to be successful, the environmental non-governmental organizations in Iran, require proper political, legal, social and economic settings, as well as the knowledge and skill of running these kind of organizations.

Hadipour and Shokravi (2002) conducted a study of the public level of environmental awareness and suggests optimum methods of environmental education for housewives and women teachers in the elementary schools of Arat city. Findings indicate the necessity of environmental education and reveal a basic weakness in information dissemination. The research indicates popular lack of information and awareness is the vital factor for creating and increasing of environmental problems. More than one-third of teachers are of the opinion that viewing training films and holding training class for students are the most effective methods in environmental education. Lack of sufficient popular training and proper organising are the outstanding reasons for the unsatisfactory levels of official organizational activities. In explaining its findings, the research presents suggestions for increasing environmental awareness.

Sheikh Khatibi (2002) conducted a study on environmental education to citizens or creating motivation and self-awareness through their participation in local-public activities.
Until environmental education in large cities depends on direct training, it will fail to attract citizen cooperation and also create other negative effects. Encouraging local people to solve their environmental problems in the immediate vicinity would prove very effective. They understand their local situation better and their motivation and participation is stronger, given this level of incentive, their awareness can be raised if proper participatory conditions exist. Research has been conducted in one section in District 2 of Tehran Municipality. Four residential high-rises were covered and considered a study module that housed 712 families. Statistical methods were used to evaluate the buildings’ management effectiveness and the impact of public participation in improving management. The results indicated the following factors hindered, the tenants from effectively cooperating with management:

1. Personal and individual problems.

2. Management difficulties and

3. A lack of equipment and facilities to promote a resident –management working relationship.

In this survey, the third element was recognized as the most important factor. It eclipsed the two other factors while negating other choices for successful collaboration between residents and management. These choices included:

1. Increasing awareness through neighbours exchanging experiences.

2. Creating incentive for participation in residents.

3. Increasing their self-awareness at the least expense.

Karmi (2002) conducted a study on clarifying environment public training in Iran. The aim of public training involves both learning and teaching. No one can
ignore the role of the public learning principle in increasing knowledge and awareness. But teaching is a controversial issue. Given the division of labour in contemporary social life and the establishment of specialized organizations, it is expected that very organization be solely responsible for the duties in its related area. For this reason people blithely assume that Department of Environment is only responsible for providing training in environmental matters and increasing knowledge in this field. This expectation runs counter to the principle of generalization of environment protection. In addition it does not correspond with the realities of the environment which in fact is an enormously broad concept that encompasses all of existence, the entire creation of God, the solar system, the biosphere, different kinds of ecosystems. There are also myriad contradictions to consider regarding environmental global protection approaches, national and international laws and regulations. This also includes the Islamic Republic of Iran’s environmental law. This paper intends to clarify the role and duty of different social institutions related to environment training. It attempts to present a proper model for planning of environmental training based on a variety of environment issues, different social categories and target groups. In this model, environmental objectives, training and education objectives as a part of national development goals and also societal needs for environmental training are considered as the primary factors.

Almasi (2002) conducted a study on how to design environment in the process of environmental education in Iran. The objective of this paper is the presentation of a method for public, continuous environmental education. In this study, we have attempted to synthesize a method by which training aims would be materialized
through management exemplary individual behaviour and promotion of a public culture of environment protection. In this respect, a system has been suggested based on the philosophical aspects of architecture and principles of human behaviour in relation to our existence in a man-made environment. In this system, performance based training is a source of environment teaching that will materialize and flourish if the self-sufficiency of the environment is properly understood. The designer of the system, through the creation of man-made environment, can provide conditions in which each individual can bond with the environment and thus have her/his identity deeply informed by it. This gradual growth of identity will lead the human personality consciously to accept the surrounding environment with all its complex systems and absorb the endless lesson it teaches. In this educational system the individual is not forced to obey any special rules but willingly accepts concepts and obeys principles. Hence, there is no necessity for a supervisory or control factor. As the environmental education system cycle exists, environmental training continues. This paper consists of two parts. First it discusses the “theoretical bases of the environmental education system”. Secondary, it presents suggestions “to design an environment for effective environmental education”.

Karimi (2003) carried a survey study on environmental education needs for students, teachers and housewives in the Khak Sefid district of Tehran. In this survey, the degree of awareness of three groups of different social classes of people in this district have been studied and measured by using the Kaufman, Currigan and Johnson’s model of needs assessment. Results of the research show that the consciousness of the average housewife on environment issues is very limited. The
relative knowledge of teachers and students on the general concept of environment is greater. In each of the three groups, most of the individuals interviewed were eager to learn more about environmental issues. Yet, very few were willing to pay the cost for such training. Finally, the survey proposed needed training program and appropriate training styles of each group.

2.4 STUDIES RELATED TO ENVIRONMENTAL EDUCATION IN OTHER COUNTRIES

Euler (1989) undertook a comparative study of the effectiveness of a formal versus nonformal education program for male and female sixth grade students’ environmental knowledge and attitudes. The objective is to examine the effectiveness of environmental education programs on the environmental knowledge and attitudes. The findings of the study are:

1. Both the experimental groups, the formal (A) vs. the control, and nonformal (B) vs. the control, demonstrated significant differences in knowledge and in three attitudes of EAS scales (nature centers, plants, wildlife).

2. There was no significant differences in gender or any measures.

3. There was no significant interactions in any of the measures.

4. Post hoc analysis revealed that the formal treatment group had significantly higher scores on the knowledge test than both the non-formal and control groups, they also had significantly higher scores than the control groups on the two of EAS (plants, wildlife).

5. The nonformal treatment group scored significantly higher than the control group on EAS (plants, wildlife).
Yount, James (1989) conducted a study of factors influencing environmental attitude; the relationship between environmental attitude defensibility and cognitive reasoning level. The objective of this study was to investigate the relationship between factors believed to contribute to the formation of an environmental attitude by college non-science majors. To also know the effect of an environmental studies course on environmental attitude, the amount of factual information that is brought to an environmental attitude decision, and the possibility of linkages between affective and cognitive domains. The findings of the study are:

1. Students who attended an environmental studies class did not significantly change attitudes when compared to the control groups, but did exhibit increase in their count leaves of defensibility.

2. In addition, students in the environmental studies course with higher cognitive reasoning scores were more prone to increase total defensibility as a result of course as well as to change attitude. These data imply a linkage between cognitive and affective domains in the environmental attitudes decision process.

Trotter, Patricia and McNally (1990) conducted a study of environmental attitudes of participants in the Oklahoma 4-H Philmont Outdoor Adventure Program. The objective of this study was to determine if differences existed in the environmental attitudes of current and part participants in the Oklahoma 4-H Philmont Outdoor Adventure Program. The findings of the study are:

1. Demographic characteristics did differ in the participation of subjects; the age of subject and family income of male subjects.
2. The participants had a positive attitude towards the outdoors, both at entry level and at completion of experience.

3. Pre-test scores indicated that adults had a more positive attitude towards outdoors than youth.

Gaylen, Naney and Irwin (1990) conducted a study with a purpose to measure parental attitudes towards environmental education, to find out which demographic factors relate to which attitudes concerning environmental education and what specific environmental topics affect overall attitudes. The study was conducted in five different socio-economic communities that were chosen randomly from a tri-country area of Illinois to have 100 parents of elementary age school children. They answered 69 survey questions of environmental attitude inventory with additional 8 demographic questions. Parents answered with ‘yes’, ‘no’ or ‘uncertain’ and chose specific demographic levels that best described themselves for 8 demographic questions. The return rate was exactly 50% for changing attitudes towards plans and plants study and for changing classroom practice.

Eric (1991) conducted a study on Care Bears Environmental Awareness Kit. Studies show that the three most frequently cited sources of environmental information are family, school and the media. This kit provides parents with an opportunity to increase a child’s environmental awareness through activities which focus on the environment in a way children ages four to nine can understand. A workbook uses the popular care bears characters to encourage children to “care” for the world around them, to learn how to put that caring into action, and to realize that their actions can positively affect the environment. A parent’s guide accompanies the workbook and provides 17
individual and group learning activities and skill-building exercises that complement five environmental issues raised by the workbook. These issues are: understanding the concept of environment, litter prevention recycling water conservation and energy conservation. Activities involve children in understanding and identifying words and concepts as well as the environmental consequences of their actions. The kit also contains care bears stickers and four over size posters emphasising the environmental issues discussed.

Keen, Meg (1991) examined the influence of the earth education program ‘sunship earth’, on ecological knowledge and environmental attitudes of 5th and 6th grade classes. Pre and post program questionnaires were administered. Students who attended the ‘sunship earth’ program increased their ecological knowledge significantly. Participation in the ‘sunship earth’ program did not result in more positive environmental attitudes. Part of the success of the sunship earth program is attributed to the setting in which it occurs and the techniques used to develop ecological concepts.

Benedek and Kohl (1991) conducted a study on environmental education and training in Hungary.

In Hungary, the educational system is responsible for developing an up-to-date and enlightened attitude toward the environment. Elementary schools have made the greatest advance in environmental education (EE) during the past 10 years. Conditions for environmental education are most favourable in the gymnasium: secondary vocational education has the greatest lack of EE in its curricula. A development project for EE in secondary vocational training has designed an ecological and environmental protection
curriculum including general and specific requirements and some elements of curriculum content. Recommendations for teacher training and postgraduate training have also been made. Three pilot programs show correlations between environmental protection and technology. They illustrate the role of the Paks nuclear power plant in EE, an experiment in EE in the Baktay Ervin Gymnasium and vocational secondary school for water management in Budapest (Hungary), and an experiment in EE in the Petrik Lajos vocational secondary school for industrial chemistry in Budapest. Comprehensive analysis proposals are for the modernization of Hungarian EE and solutions to problems arising within the framework of international collaboration.

Hausbeck and others (1992) conducted a study on environmental knowledge, awareness and concern among 11th grade students. An assessment of eleventh graders (n = 3,200) in New York state reveals low scores on environmental knowledge and higher scores on environmental awareness and environmental concern. Includes policy suggestions for improved environmental education at the secondary school level within New York state and the United States.

Hwa (1992) conducted a study on Appraising Environmental Quality in Science Education among adolescent students in Malaysia. Reports a study of the effect of sensitisation on randomly selected Malaysian secondary school students’ (n=90) attitudes, commitment and knowledge toward environmental issues. Findings indicated that:

1. students were favourably committed to environmental issues despite a poor grasp of environmental knowledge, and

2. conceptual knowledge is a reasonable predictor of environmental behaviour.
Padua and Jacobson (1993) conducted a study on comprehensive approach to an environmental education program in Brazil. Evaluated the Morro do Diabo State Park environmental education program using the planning-process-product evaluation model. Formative evaluation provided educators with continuous feedback to improve activities. A study of 14 students from grades 5-8 who visited park to develop environmental awareness demonstrated that program was effective.

Szagun and Mesenholl (1993) conducted a study on environmental ethics: An empirical study of West German adolescents. Assessed the ethical and emotional concerns about nature by West German adolescents (n=830) aged 12, 15 and 18. Scores were highest for 12 year olds and 15 and 18 year old females scored higher than their male counterparts. Each age group judged harm to ecosystems as immoral and more unacceptable than harm to humans.

Ramsey (1993) conducted a study on the effects of issue investigation and action training on eighth-grade students’ environmental behaviour.

Reports the instructional effects of a formal environmental education methodology, Issue Investigation and Action Training (IIAT), on eighth-grade students. Focuses on whether IIAT can improve responsible environmental behaviour in middle school students and whether variable associated with responsible adult environmental behaviour will be concomitantly enhanced. Findings indicate that both effects are possible.

Hutchinson, Suzanne (1994) conducted a study on Creativity, Self-actualisation and Androgyny: A co-relational study in relation to Environmental Attitude and Integration of Self. This study sought relationship among the variables of
androgyny, creativity, self-actualisation and environmental attitude and the proceeds into the theoretical constructs of the relationships. Concurrent correlation was used regarding the variables of androgyny, creativity, self-actualisation and environmental attitude. A positive relationship was found among the factors.

Szagun and Pavlov (1995) conducted a study on German and Russian Adolescents’ Environmental Awareness. German (n = 610) and Russian (n = 610) adolescents in 3 age groups, 12, 15 and 18 years, were given a questionnaire assessing their readiness for pro-environmental action, and their ethical attitude toward nature. In both nationalities anxiety, sadness and anger about environmental destruction were high, but hopelessness was rejected. German adolescents expressed more readiness for pro-environmental action and more consideration in human relations with living things than Russians. While German adolescents were willing to perform small-scale pro-environmental action, with age they became increasingly reluctant to accept greater commitments for ecology. Females of both nationalities agreed more strongly to emotions and action than males. Particularly males aged 15 or above. Results are interpreted in terms of differences in environmental values and education in the two countries and in terms of females’ higher prosocial attitudes.

Wojtowicz (1995) conducted a study on health and environmental protection: A survey of student attitude personal author. The purpose of this paper is to provide an overview of the outcomes associated with a psychometric survey of students’ environmental attitude. A review of relevant literature shows that student attitudes are important components in the development of knowledge and behaviour-based interventions. A 16 item questionnaire focused on subjects’ perception of social
versus individual responsibility for environmental protection subjects (N=7,834) were drawn from elementary, middle, high school, and University student populations in Alabama and North Carolina. Data indicated that subjects from different states had different environmental attitude predispositions and that subjects from varied ethnic backgrounds and difference grade categories had significantly different attitudes, subjects were aware of the link between environmental hazards and health and felt that individuals are responsible for exercising the control necessary to effect change. In addition, subjects believed that environmental protection must start with the individual but collective effort at the societal level is necessary for success.

Rockland (1995) conducted a study on where are the gaps in environmental education? Disadvantaged kids have different needs and concerns. Presents results of a national survey on students’ environmental concerns, education, and actions with a special focus on disadvantaged youth. Results indicate that non-disadvantaged youth have a more altruistic focus on environmental problems and are more concerned about plants, animals, and future generations while youth from disadvantaged areas are more concerned about present and immediate environmental problems.

Von Hofsten (1995) conducted a study on Swedish National Environmental Education.

Describes the administrative framework of Sweden’s government, most notably its environmental protection agency, and explains how it shaped Sweden’s national environmental education program. Legislation supports rights to basic information on environmental issues. Such underlying values have been incorporated into the new
national curriculum. Identifies the changes necessary to achieve curriculum goals including inservice teacher training and an interdisciplinary approach.

Ndaiitwayeko, Albert (1995) undertook a study on Assessment and comparison of environmental knowledge and attitudes held by 13th grade general and technical education students in the Republic of Burundi. Sample size was 559 students of 28 schools. Three instruments were developed to test respondent’s environmental attitudes and to gather information about students’ socio-demography of environmental information, type of school, parents occupation and level of education. The major findings were: (1) Significant differences existed between respondents environmental knowledge and attitudes towards environment with regard to five most compelling environmental issues in Burundi-Human population, natural resources water quality, ecological principles and global environmental concerns.

(2) The general education students outscored their counterparts on the average.

(3) The levels of environmental knowledge and attitudes towards the environment were relatively low and very close for both the groups and (4) Significant differences were found between respondents’ environmental knowledge and attitude towards environment based on students’ socio-demographic variables employed in this study.

Leeming, Frank Porter, Bryan et al. (1996) conducted a study on effects of participation in class activities on children’s environmental attitudes and knowledge. Eight environmental related activities were chosen to know the environmental attitudes and knowledge of participants. The program had a significant positive effect on attitude toward the environment, but did not influence knowledge of environmental issues.
Prelle and Solomon (1996) conducted a study on young people’s general approach to environmental issues in England and Germany. Reports on a study of adolescent students’ opinions concerning environmental issues. Students from rural and urban areas in England and Germany answered questionnaires covering environmental issues, their individual lifestyles. Questionnaires including free writing sections. Attempts to understand the students’ “umweltbewusstsein” (the whole range of a person’s knowledge, attitudes and behaviour).

Chan (1996) conducted a study on environmental attitudes and behaviour of secondary school students in Hong Kong.

Describes an investigation into the environmental attitudes of students in Hong Kong and their readiness to engage in pro-environmental behaviour that could involve change in personal lifestyle. Students’ over-optimism towards technological development and the perceived importance of the benefits of modern consumer goods were major factors that contradicted their concern for the environment. Gender was also significant.

Peters and others (1997) conducted a study on selected bioethical issues in Japanese and German textbooks of biology for lower secondary schools. Investigates aspects of the coverage of bioethical issues, especially environmental issues, in Japanese and German biology textbooks for lower secondary schools. Findings show that German textbooks devote more space to these issues and have a more appealing presentation style than Japanese textbooks. Teaching ethical view points in biology is discussed.

Eagles and others (1997) conducted a study on student evaluation of the Waterloo County Board of Education Outdoor and Environmental Education. In a survey of 517 8th
and 12th grade students in Waterloo County (Ontario) schools, the majority of students who had attended outdoor and environmental education programs reported high levels of learning in key areas of ecology and environmental studies. In addition, most respondents reported feeling positive about the program and their participation in it.


Nigerian secondary students were surveyed regarding selected environmental issues to determine prevailing knowledge, attitudes and practices. Students performed very poorly in the knowledge component of the questionnaire and demonstrated negative attitudes towards issues. Students also indicated practices that were harmful to a healthy environment. Discusses the implication of these findings for developing an environmental education curriculum for Nigeria.

Wagner (1997) conducted a study on environmental attitudes in the elementary grades. Ecological or environmental programs integrated into science, courses in the elementary grades can make children aware that they can have either a positive or a negative effect on their environment. The following bibliography was compiled from articles and dissertations on environmental education and children’s awareness, attitudes and perceptions of the natural environment. Topics covered include curriculum development, promoting ecological awareness in young children, development of tests for environmental attitudes, summer nature camps, learning opportunities in nearby natural resource areas, field trips to public gardens, children’s
experiences with vegetation on school grounds, inner-city attitudes, rural attitudes, and waste references.

Yerkes and Haras (1997) conducted a study on outdoor education and environmental responsibility in US, Washington. Outdoor education offers programs that provide opportunities for students to become environmentally conscious citizens. However, awareness of environmental issues is not enough to preserve our world of limited natural resources. Students must also be prepared to recognize their environmental responsibilities and act upon them. This involves behaving in ways that sustain and nurture the natural environment and consider the needs of others. Such a sense of environmental responsibility is a potential outcome of outdoor education under certain conditions. This Digest reviews what various studies have shown about developing environmental responsibility.

Reid and Sadi (1997) conducted a study on Jordanian and British primary school children’s attitudes towards the environment. Explores the important but neglected field of primary school children’s attitudes toward the environment, particularly toward issues of pollution, waste, and plants and animals. Using a scale in Arabic and English, shows that environmental education programs produce only slightly positive results. Gives consideration to further research required to enhance these programs.


Presents the results of research on environmental education in Zimbabwe focusing on gender differences in knowledge, attitude, problem-solving skills, and environmental
activities (n=555) of secondary school students, girls generally had more environmental knowledge than boys. Attitudes toward environmental issues were mixed. Girls tended to be more environmentally active than boys and boys did better than girls in problem-solving exercises.

Amemiya and Macer (1999) conducted a study on environmental education and environmental behaviour in Japanese students.

Ethical behaviour towards the environment includes valuing nature, living sustainably in harmony within nature and respecting the autonomy of all living things. This paper describes a study of Japanese high school students’ attitudes with regard to environmental ethics. Findings suggest that students who value environmental conservation tend to abandon ideas of anthropocentrism.

Mittelstaedt and others (1999) conducted a study on impact of a week-long experiential education program on environmental attitude and awareness. A study examined a summer science camp’s impact on the attitudes of 46 children aged 9-12 toward the environment. Almost one-fourth of the 128 intentions reported were acted upon during the following year.

Manzanal and others (1999) conducted a study on relationship between ecology field work and student attitudes toward environmental protection. Reports on a study of the contributions field work made to Spanish secondary students’ (n=67) understandings of concepts and principles of ecology. Concludes that field work helps clarify ecological concepts and intervenes directly in the development of more favourable attitudes toward the defence of the ecosystem.
Robinson and Kaleta (1999) conducted a study on Global Environmental Priorities of Secondary Students in Zabrze, Poland. Examines Polish students’ (n=101) attitudes toward environmental threats. Finds that males and females, treatment and control groups, and students from different high school ranked the top three threats based more on personal experience than on whether they had taken environmental protection classes in school.

Bradley, Jennifer-Campbell, Waliczek and Zajicek (1999) conducted a study on relationship between environmental knowledge and environmental attitude of high school students. Pre-test and post-test single group design was employed. 475 students are exposed to environmental science course. The study revealed that there was a significant difference between the pre-test and post-test scores on environmental attitude. In post-test the students come out with higher knowledge scores, exhibited more favourable environmental attitude.

Kuhlemeier and others (1999) conducted a study on environmental knowledge, attitudes and behaviour in Dutch Secondary Education. In a national assessment program, 57% of Dutch ninth-grade students had a positive attitude towards the environment and 35% were prepared to make sacrifices for the environment. Student knowledge about environmental problems, however, was fragmentary and often incorrect. Environmentally responsible behaviour was more strongly connected with the willingness to make sacrifices than with attitude toward the environment.

Cedare (2000) has sponsored in cooperation with the League of Arab States and the Arab League Educational, Cultural and Scientific Organization (ALECSO), a study on Arab Environmental Education survey for University students, to assess the
perception of students towards environmental problem and their level of awareness. The questionnaire covered diverse issue ranging from noise and air pollution to environmental protection, national protectorates and biodiversity. Responses were received from Egypt, Oman, Saudi Arabia, Syria and Yemen covering in total 490 questionnaire sheets. The total average response to the questionnaire by gender reflected a higher participation by males (62%) compared to female (34%). Nevertheless, the gender analysis indicated adjoining perceptions and similarities in the level of awareness between males and females in Egypt, Oman, Saudi Arabia, Syria and Yemen.

The questionnaire and its analysis have proven useful in providing CEDARE with insightful information about the level of awareness and the perceptions of undergraduates studying to be teachers/educators in Egypt, Oman, Saudi Arabia, Syria and Yemen. In general, it has provided the center with constructive reflection about future directions to be taken in the region with regard to the type of environmental education and awareness material to be produced and the activities to be organised.

It will enable CEDARE to develop effective environmental education and awareness material. The findings will better assist the center as well as other interested parties in organizing regional activities that will encourage and stimulate Arab students to participate and augment their level of environmental education and awareness.

Tapia and Blochmann (2000) conducted a study on environmental education in Germany: Concepts, history, projects, visions. This document presents the history of
environmental education in Germany and reports on the diversions and solutions in the search for sustainable education. Five sections include: (1) Environmental Education: Learning with all one’s senses, (2) Sustainability as the new model: Knowledge of a new quality, (3) Tomorrow’s education in yesterday’s school: Scope and limits of environmental education in schools, (4) Environmental education outside schools when nature becomes a teacher and (5) A silent revolution ? Visions for a sustainable education system.

Greene and others (2000) conducted a study on environmental attitudes, knowledge and behaviours of Missouri 6th and 12th grade students. The Missouri Department of Conservation (MDC) produces various environmental materials for preschool, elementary and secondary students and sponsors, outdoor education programs. An MDC-sponsored survey of students in grades 6 and 12 found moderate levels of environmental knowledge, with weaknesses in the areas of biodiversity, wetlands, and prairies. Feelings of responsibility for the environment were related to student participation.

Loughland and others (2000) conducted a study on the social, cultural influences on environmental understandings of NSW school students in Australia. The study reported in this paper emerged from a concern that, despite twenty years of theorizing about the practice of environmental education (EE) in Australian schools, it continues to be marginalized in the school curriculum. The educational problem to be solved was how to improve the teaching and learning of EE in schools and the broader community in Australia. The aims of EE are well documented and there is little doubt that educators would agree that EE in school is an important strategy in
achieving environmental improvement. Numerous curriculum programs have been developed to assist teachers in the implementation of EE in their classrooms. However, little is known about the environmental understandings held by children. Currently, environmental programs are being developed based on assumptions of what children know and what they believe. Clearly, more effective programs could be developed if children’s environmental understandings and beliefs were known. This paper reports on research in progress. A research instrument was developed from qualitative data. This instrument in the form of a survey was completed by 2,249 students in years 3, 6, 8 and 11 across New South Wales.

CEDARE (2002) conducted a study on Arab Environmental Education school children survey in Arab countries (Egypt, Oman, Saudi Arabia, Syria and Yemen) CEDARE produced a questionnaire targeting school children in the Arab Region (Public and Private schools), whereby we ask the children’s opinion on activities they would be interested in undertaking at school, towards environmental conservation. This questionnaire is being distributed to schools in the entire Arab region and will provide us with valuable information on environmental education needs and activities that can be implemented by school children in the Arab region.

Loughland and others (2003) conducted a study on factors influencing young people’s conceptions of environment in Australia. Explains the importance of environmental education in schools for achieving environmental protection and improvement. Statistically examines factors that incline students to a “relation” rather than an “object” conception of the environment. Concludes that development of the
former would seem to be an important aim of environmental education and indicates how this might be achieved.

Johnson and others (2003) conducted a study on zoo school for pre-schoolers: Laying the foundation for environmental education in US, Florida. The traditional approach to education in zoo settings operated under the premise that meaningful learning and improved attitudes toward environmental education would occur by simply exposing children to wild animals. This study was a preliminary evaluation of an innovative environmental education program at a medium-sized Florida zoo. The study explored the extent to which one of the programs, the Tots program, facilitated the learning of basic environmental education and awareness among preschoolers. The goal of the Tots program is to provide interactive, hands-on learning opportunities for preschoolers in the zoo environment while building child-adult relationships, a mandatory feature of the Tots program is the presence and involvement of parents/guardians during all activities. Activities included circle time, crafts, time in an investigative playroom, and zoo exhibit visits. Observation of the program’s activities, along with interviews of the stakeholders, revealed that the Tots program allowed the children to develop knowledge about animals and environmental awareness in a safe environment while fostering the development of social skills.

2.5 CONCLUSION

The conclusions drawn from the above review of literature are given below.

1. Several studies indicate that the level of environmental awareness and attitude of teachers as high in many countries.
2. While some of the studies reveal significant relationship between environmental awareness and attitude of teacher and background variables like gender, age, teaching experience, a few studies indicate no relationship between these variable and environmental awareness and attitude.

3. In most of the studies, female teachers were found significantly higher than male teachers with respect to their environmental awareness and attitude.

4. In most of the studies, comparison of gender groups showed that there is significant difference between boys and girls in their environmental awareness and attitude.

5. Many studies indicate that the level of environmental awareness and attitude of teachers are enhanced with increasing their education level.

6. Many studies indicate that the level of environmental awareness of science teachers is more than other subjects.

7. Many studies indicate that there exist high, positive and significant correlation between environmental awareness and environmental attitude of teachers and students.

8. Many studies reveal that the students studying in Government and private schools differed significantly, in favour of environmental awareness and attitude.

9. There are only a few studies about environmental awareness and attitude of teachers and students in Iran.

The review of related literature has convinced the Investigator that there is a need for undertaking comparative studies on environmental awareness and attitude. This is the real imputes and driving force for the present researcher to undertake
the present study – A Comparative Study of Environmental Awareness and Attitude of Teachers and Students of Secondary Schools in India and Iran. Since environmental education is a relatively new program in the educational system, it is all the more reason why study of present kind need to be undertaken.