Chapter II
REVISIT OF THE RELATED STUDY

In the course of introducing the work in chapter–I, the investigator had already furnished some of the relevant works. However with a view to bringing to focus some important research trends, a specific review of the related literature is inevitable. The present chapter discusses the review of studies conducted so far in the field of environmental education. Such an attempt is made to develop idea about the nature and findings of the previous studies and to arrive at a rationale for the study. In this context, attempt is made to classify the studies. While doing so, the studies conducted abroad and in India have been classified separately.

2.0 Introduction

A collected body of works done by earlier scientists in technically called the literature. Any scientific investigation starts with a review of the literature. It has been helpful in understanding the different dimensions of the study. Singh (1986) has indicated the following main objectives of a review of the literature.

1. Identifying Variables Relevant for Research:

When the researcher makes a careful review of the literature, he becomes aware of the important and unimportant variables in the concerned area of research. A careful review also helps the researcher in selecting the variables lying within the scope of his interest, in identifying and operationalising variables and in identifying variables which are conceptually and practically important.
2. Avoiding of Repetition:

A review of the literature helps the researcher in avoiding any duplication of work done earlier. A careful review always aims at interpreting prior study and indicating their usefulness for the study to be undertaken. Thus prior studies serve as the foundation for the present studies. In some cases the duplication or replication becomes essentials. This is especially true when the researcher wants to test the validity of the earlier studies. In such a situation, too, a careful review helps the researcher in getting acquainted to the study whose validity is being assessed at present.

3. Determining Meaning and Relationship Among Variables:

A careful review of the literature enables the researcher to discovering important variables relevant to the area of the present research. When significant variables are discovered, the relationship among them can be identifying. Subsequently, the identifying relationship is incorporated into different hypotheses. Thus, for conducting a scientific study, the relationship between the different variables must be explored by reviewing the literature so that a good context may be built up for subsequent investigations.

4. Synthesis of Prior Works:

A careful review of the literature enables the researcher to collect and synthesize prior studies related to the present study. This, in turn, helps him in building perspective for future research. A synthesized collection of prior studies also helps a researcher to identify the significant overlaps and gaps among the prior works.
In the light of the significance of reviewing the literature mentioned above, an effort was made by the investigator to review the related research. The researcher has tried to search related studies from different sources. She has also tried to get original studies in detail. In this process, surveys of educational research were of immense helping but other sources such as journals, books, encyclopedia, dissertations and thesis were consulted at large to make acquainted with the present state of knowledge. The investigator explored the previous literature relevant to the present study and could collect the following research studies, which bear direct and indirect relevance to the present study.

2.1 Studies Conducted in Abroad:

Ebeling (1978) in his study on ‘The Effects of three teaching strategies on the development of Environmental Attitudes of selected New Jersey High School Students’ found no significant difference in gain in attitude scores between groups; there was a significant difference in gain in environmental knowledge of all the groups over the control group; a significant positive relationship was found between environmental attitudes and environmental knowledge; a significant relationship between the subject’s locus of control and their environmental attitudes does exists (the more internal a person is the more positive an environmental attitude he will tend to have), and the project group should a positive change in attitude significantly higher than the role playing group and the lecture discussion group.

Hughes (1979) conducted a study on comparison of the relative effectiveness of student directed versus a teacher directed program of High School environmental science in changing student
attitude towards the environment. He found a significant difference (at the .02 level-2-failed tests) on both the Q sort (attitude) and environmental science test (cognitive). There was a gain in the means of both groups on the post-test but the T-D group means were significantly greater than the SD group means. A ‘traditional’ or T-D course in environmental science is more likely to change environmental attitudes and knowledge of above average IQ, male, tenth to twelfth grade students than is a S-D program using the indicated B-scs materials.

Leticia (1986) conducted a survey of the environmental knowledge, comprehension, responsibility and interest of the secondary level students and teachers. In this study it was found that:

i) The majority of the students was aware of pollution, pesticides, typhoons, dams and volcanic areas and could explain blast fishing and its environmental effects and age characteristics not know about the effects of forest destruction, new techniques of the fish culture and the total population of the Philippines.

ii) The students’ environmental values were not consistent.

iii) The high section students were not as interested in learning more about the environment as the low section students were.

iv) The teachers were aware of the many events in their environmental but could not explain many of them.
v) The teachers’ environmental values were in consistent and were interested in learning about energy, population dynamics, conservation and recycling.

Edratin (1989) found that a majority of pre-service teachers had strong opinions, feelings and support for environmental quality and that attitudes and familiarity with specific environmental concerns were varied among groups, that there was a high degree of awareness, interest and worry over problems about ‘water quality’ and ‘air quality’, a perceived awareness of resource management concerns, lesser preference to teach over population and waste management topics, a positive correlation between perceived readiness to teach problems and that the prospective teachers perceived themselves to be knowledgeable to teach a broad range of environmental topics.

Pooploy (1990) conducted a study on the comparison of environmental education concepts of upper secondary school students between science programme and language science books programme in Bangkok, Thailand. The findings of the study were as follows:

i) Mathayom Suksa 6 students of both science and language social studies programme had environmental education concepts at the moderate level.

ii) In comparison of the environmental education concepts of Mathayom Suksa, 6 students between science programmes and language-social studies programme, there was a significant difference at the 0.01 level. The environmental education concepts of science programme students were
higher than those of language-social studies programme students.

Gambo (1991) found that environmental knowledge to the complex results of several diverse variables working collectively. All of the variables in the model made significant contributions to environmental knowledge. Internal locus of control had the strongest direct influence and socio-economic status had the largest total effect on twelfth grade environmental knowledge.

Pasuk (1991) conducted a study on 'Activities of border patrol police teachers in developing environmental awareness of youths in remote areas in Thailand. The findings of the studies are:

i) The instructional material most often used was the textbook published by Ministry of Education.

ii) The co-curriculum activities like agricultural activities for school lunch project, school environment development, meetings for local natural resources conservation planning were practiced very often.

iii) Co-community activity practiced very often to stimulate youths and people in agriculture and lunch project.

iv) Shortage of modern instructional media, lack of budget for co-curriculum activities and environmental illiteracy of the people creates problem in activities in developing environmental awareness.

Santipapwiwatana (1991) studied 'knowledge and opinions concerning environmental conservation of Prathom Suksa 6 students
in Ampur Chiangkham, Phayao provinces, in the northern part of Thailand. He found that: (i) Students' knowledge about soil, forest and water was good but knowledge about wildlife, air was medium. (ii) Students' opinions concerning environmental conservation were satisfactory.

Depree (1992) conducted a study entitled “An assessment on changes in environmental knowledge and concerns of High School Students during an environmental education courses.” He concluded that students enrolled in the course experienced significant increase in environmental knowledge over the year. The control group did not the scores were not differentiated by sex, grade level or achievement. Significant changes in the selection of sources of information were made by the experimental group but not by the control group after a year. The major concern for both groups involved pollution where they lived. The category ‘personal family’ was found to be the most popular solution on both tests. An increase in the selection of more than one solution for each dilemma by the experimental group indicated increased perception of the complexities of the dilemmas. This pattern was reversed by the control group.

Chin (1993) found rural junior high school students to have lowest level of environmental knowledge, environmental attitude, awareness of environmental problems and verbal commitment. Older students out scored younger students as expected. Rural teachers possessed less environmental knowledge than urban teachers. Girls tended to be more aware of environmental problems than boys interestingly. Pre-service and in-service teachers were no more aware of environmental problems than senior high school students. The in-
service teachers expressed more commitment to the environment than all others.

A substantial concern for environmental issues among pre-service secondary teachers was found by Yang (1993) in his study of perception of pre-service secondary school teachers in Taiwan. The investigator further found a positive correlation between the pre-service secondary school teachers’ views towards the environment and environmental education. Lack of knowledge and lack of teaching skills were two concerns of pre-service secondary school teachers as they faced the challenge of conducting experimental education. Rural teachers possessed less environmental than urban teachers. Girls tended to be more aware of environmental problems than boys. Interestingly, pre-service and in-service teachers were no more aware of environmental problems than senior high school students. But in-service teachers expressed more commitment to the environment than all others.

Fong (1993) studied the environmental awareness and action at elementary school in Taiwan, the Republic of China. The findings included 531 Grade-5 students and their parents and showed that all subjects agreed strongly that everyone should protect this planet, 237 students took more action. Parent environmental awareness seemed not only to be related with their own action but also to be related with their student actions and vice-versa. Parents’ actions on daily routine were same as students’ daily routine.

In the Global survey by UNEP (1995), it was revealed that children worldwide are worried about the rate of pollution (water and air). 41.8 per cent see pollution as the most persistent environmental
problem in their communities. A majority of the respondents who see desertification and deforestation as major global environmental problems are children from developing countries. Over 50 per cent of the respondents think that we are all responsible for global and local environmental problems. “People must change their attitudes towards nature _____”.

**Midling (1996)** conducted a study on Environmental Education in China: The case of secondary schools in Sichan province. The study reported that the students in six pilot environmental education school had significantly higher total mean scores on an environmental knowledge scale than did students from the nine non-pilot environmental education schools in the sample. Differences in attitudes towards environmental protection, while statistically significant, were weaker than were differences in environmental knowledge.

**Primance (1996)** studied the problems of Environmental Education camps organised by secondary education students. It was found that most schools used information concerning the conditions of the site of camp. The students and teachers had problems of camp planning, activities, length of time and camp site.

**Robinson (1996)** found a positive change in the experimental group students’ attitudes towards the environment and behaviours towards the environment. A positive change in students’ environmental literacy levels and attitudes towards telecommunications were also observed after participation in the Global-thinking project.
Thrall (1996) conducted a study on 'Radon testing': a study of scitech and life science, students’ environmental knowledge and attitudes. Findings of the study suggest that there is not a linear relationship between the teaching of environmental knowledge and the formulation of positive attitudes about the environment. However, gender and the age of the students did seem to have a significant effect upon the formation of the positive attitudes.

Zhang (1996) while using multimedia to teach optics to college students found considerable improvement in students’ understanding of the optical concepts taught in the multimedia activities.

Massialas (1997) studied the high school teachers’ knowledge and attitude towards environmental issues found that the general environmental knowledge of the teachers was quite high and their attitude towards environmental issues was generally positive. The relationship between teachers’ environmental knowledge and their attitude was strongly and significant, even with the introduction of the background variables.

Oberst (1997) in a study found a statistically impact on student ecological knowledge, and statistically insignificant impact on environmental attitude. The qualitative data revealed four patterns programme impact associated with programme goals as well as goals for environment education.

2.2 Studies Conducted in India:

Naik (1971) made a study on school and college education in creating environmental awareness. The findings of the study are: (i)
The four major and integrating components of environmental awareness are knowledge, real life situation, conservation and sustainable development. (ii) Environmental education should start from primary level, so that children develop a healthy optimistic view of their environment. (iii) The study suggests involvement of basic ecological concept, environmental concern and strategies in our educational system to influence and motivate the child and youth who are to inherit the world.

Gupta et al., (1981) studied the awareness of environment among rural and urban schools and non-formal education centres with the help of 20 rural, 35 urban and 60 non-formal centre students of class IV. It was found that school going rural children did better than the urban sample. Also, non-formal centre students were more aware than urban students. in this study, the components of environment in which students of these three groups were lacking or were well acquainted were also identified.

Gupta (1983) investigated the change in the level awareness of students, teachers through environmental education programmes.

Maan (1983) the high school students became more aware about the magnitude of environmental problems after they were about harmful effects of the misuse of environment.

Sodhi (1985) studied the level of awareness of women graduates towards environmental problems about home management through Environmental Education.
Dhaliwal (1985) & Bains (1982) conducted surveys to find out the level of awareness of different sections of the society about environmental pollution.

Gupta (1986) studied the attitude of teachers towards environment education. The teachers had shown a favourable attitude towards various dimensions of environmental education. Their divided opinions or unfavourable attitude towards some issues on the attitude scale indicated their lack of awareness of the interdisciplinary nature of the subject.

Gahir (1987) studied the attitude of scheduled casts towards population education and environmental education in relation to their family size and education level.

No significant differences was noted amongst the male parents, when primary pass group was compared with middle pass group, middle with matric and graduates with post-graduates, the attitude of female parents in all these comparison were distinct apart from one another.

There was no significant difference between the attitudes towards environmental education of male scheduled caste parents splitted up in small, moderate and large size families and compared with each other. However, in case of female parents, whose husband had the same education background, the attitude towards environmental education of smaller size families group, was more developed than the attitude of the moderate families group and similarly that of moderate families group more developed than that of large families group. This difference in the more developed attitude of female parents might be attributed to the equal educational
background of both the male and female parents and that of male parents only.

Antonysamy (1989) while teaching environmental concepts to school dropouts through video and charts found that the school dropouts taught by the video method learned more concepts on environment than those who were taught by using charts. The working children improved their achievement on ‘Environmental Concepts’ after viewing the video programme.

Rane (1989) evaluated the environmental studies approach of Parisar Asha in municipal schools in Greater Bombay.

The researcher found that Parihar Asha has gained momentum within a short period by way of organising various programmes for implementing the EVS approach to learning in a large number of schools of varied kinds and had a favourable opinion about the EVS approach in their classrooms along with the traditional method of teaching.

Devi (1990) in a critical study on the environmental curriculum in Andhra Pradesh found that the environmental studies (EVS) curricula did not cater to the essential needs of learner for whom they were meant. The EVS curricula did not introduce children to the desired scientific skills and attitudes. The prescribed curricula did not adequately reflect the stated curriculum objectives. The investigator highlighted that EVS curricula in order to be more effective, should be comprehensive, sequential and full of experienced that link children’s school-based learning with their environment and the universe.
Shanawaj (1990) conducted a study on Environmental awareness and Environmental attitude of secondary and higher secondary school teachers and students. He found a very high level of awareness on the part of teachers and students regarding the environment and this were more in the urban than in rural groups. Teachers had more awareness of the environment than students. Girls possessed significantly more awareness of the environment than boys.

Kidwai (1991) a framework for an environmentally oriented geography curriculum at secondary stage was presented.

Praharaj (1991) explored the level of environmental knowledge, attitude and its perception among 416 pre-service and 302 in-service secondary school teachers in Puri district.

It was found that the level of environmental knowledge was low among pre-service teachers, although conceptual knowledge was moderate. Among the in-service teachers, environmental knowledge was moderate and factual knowledge about the environmental was low. Both the groups differed significantly in their level of environmental knowledge. They had a favourable attitude towards environmental education although the in-service group had a higher level of attitude than that of the pre-service group. There was moderate correlation between environmental knowledge and environmental attitude. 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.

Gopalakrishnan (1992) studied the impact of environmental education on primary school children. In her study she found that the
distribution of the total environmental education test scores of the entire sample approached the normal form which implied the studying environmental education had a very good impact on the children. Analysing the EETS area-wise, the children of Madras scored better (arithmetic mean : 41.85) when compared to that of Coimbator and the Nilgiris, and this could be due to better exposure of the Madras Children.

The study further showed that the participatory learning approach could bring about a better impact. Teachers, in general, felt that there was not sufficient time to give importance to learner-centred activities.

Sahoo (1992) attempted to renovate the concept of environment education as a broad concept and being perceived as lifelong experiences for all.

Patel (1994) observed that the experience of the teacher plays an important role in keeping himself aware about the surrounding environment. Male teachers are more conscious for the environment in which they live. But the main effect of area where the teachers work has been found to be negligible. It shows that the male teachers with long school experience of urban area are more aware about the environment education.

Kumari and Singh (1995) in their study found that teachers selected as representative sample have favourable attitude towards environmental education. No significant difference in the attitude of primary and secondary school teachers towards environment education was found.
Maharjan (1995) in a study found that the proposed EVS curriculum was functional but required more extensive evaluation for the whole range of units.

Padham (1995) conducted a study to assess the environmental awareness among teacher trainees. The findings reveal variation in environmental awareness between the urban and rural trainees. The masters' degree holders exhibited higher environmental awareness as compared to the bachelors' degree holders. Better the educational qualifications better is the awareness relating to environment and its problems.


In the study it was found that there was a significant effect of EAP as a whole treatment on environmental awareness (EA) of the teachers of experimental group. There was no significant difference in the mean scores of EA possessing high and low experience teachers. There was no significant interaction between independent factors of EAP and experience upon EA of teachers.

Vashisht (1995) in a study on environmental awareness among adolescents found that the awareness towards forest and environment, air pollution, water pollution, soil pollution, noise pollution, population and environment, forest and environment, education and environment, preservation of wild life and environment etc., was very poor. The level of awareness was found to be higher in case of boys as compared to girls.
Bala (1996) studied the environmental awareness among university students and found that the Awareness of the students on the concept of ‘environment’ and ‘environmental education’, air pollution, soil pollution, utilities of forests in cleaning and preserving our environment, was satisfactory. While on the concept of pollution, water pollution, noise pollution caused by industry, population explosion, destruction of wildlife, illiteracy, poverty and degeneration of values in relation to environment was very low. The level of awareness was found to be higher in case of boys as compared to girls.

Bhattacharya (1996) undertook a study to measure the environmental awareness among primary grade girl students and their parents in Varanasi. Among the primary girl students studying in Grade-III, only 44.44 per cent were in the above average, 48.89 per cent were in the below average, 66.7 per cent were in the low categories and none were there in the high category. Among the girl students studying in Grade-V, only 57.3 per cent were in the above average, 37.08 per cent were in the below average and 5.62 per cent were in the low categories and none were found in the high category. No sex difference was found in the case of Grades-III and V girl students in terms of their environmental awareness. Further, no sex difference was found in case of Grade-III and V girl students in terms of orientation, attitude and responsibility factors of environmental awareness.

Prajapat (1996) studied the effect of programmes on developing awareness towards environment among the pupils of standard-IV.
After the study it was found that pre-acquired initial environmental awareness played much more role in enhancement of environmental awareness of the pupils of standard-IV. A programme developing environmental awareness was an indirect successful means to develop the environmental awareness of the pupils of standard-IV. The main effect of the treatment i.e. of the programme developing environmental awareness was highly significant with reference to environmental awareness. The pupils of experimental group were found with more enthusiasm than the pupils of control group. The students from the non-government schools had been affected more by the programmes developing Environmental Awareness. The most remarkable effect of the programme was seen that the pupils from all the groups were more enthusiasm and zealous towards receiving the education through programmes rather than through the textbooks.

**Satapathy et al., (1996)** developed local–specific and activities–oriented resources materials for promoting learner centres MLL-based teaching of EVS-II at class-III stage in Gajapati district of Orissa.

More than 200 examples and 100 activities had been identified for EVS-II, in class-III, pertinent to curricular concept. The suggested supplementary examples and activities, besides being useful in transaction of lessons, made learning joyful and interesting.

**Sidana et al., (1996)** undertook an investigation for studying the environmental interest towards environmental education among secondary school students.
This study revealed that the performance of students in general came under the category of good interest towards environmental education. A significant difference existed between urban and rural students in their interest towards environmental education. The rural students possessed more interest than urban students. The girls were found to have more interest towards environmental education than boys.

Singh (1996) in a study on environmental education awareness among upper-primary students and their interest towards environmental education found that the level of awareness among urban and rural private school students was much better than urban and rural government school students. Urban boys possessed higher level of awareness than the urban girls. The rural girls have shown better performance than rural boys.

The urban private school students have shown better interest towards environmental education than the urban government school students. While rural government school students have much more interest than the rural private school students.

Patnaik and Basavayya (1997) developed a training package in environmental studies-II for primary teacher trainers based on training needs of teachers and learning difficulties of students. The findings indicate that out of total 38 competencies, none was mastered by the students. The important training needs expressed by the teachers were innovative methods of teaching, remedial measures and recording of MLL attainment. Teaching package had positive effect on qualitative improvement in teaching and learning of EVS-II in class-VIII.
Thakur (1998) studied the environmental awareness among college students and found that the urban college students have more awareness about the concept of environment, environmental education, forest and environment, air water, noise and soil pollution, pollution control than rural college students. College boys have more environmental awareness than college girls.

Kumari (1999) in a study on environmental awareness among elementary school teachers found that the elementary school teachers need more exposure to environment and related issues. It was also found that private school teachers were more aware towards environment as compared to government school teachers.

Sharma (1999) studied the attitude of high school students towards environment education and found that the attitude of urban high school students was more favourable than that of rural students. The attitude of girls was found to be more favourable than that of boys. The study suggests that rural students should be provided more exposure to understand the environmental problems.

Sharma (2000) studied the environmental awareness among primary school students. He found that: (i) urban students are more aware about their environment as compared to rural students, (ii) both rural and urban students lack knowledge of concept of environmental, (iii) the students are aware about the importance of forests in keeping the environment pure and healthy. The results show that urban students are more aware about Forest and Environment component as compared to rural students whereas there is not so much difference in the awareness of Male and Female students, (iv) the urban school students are more aware about pollution as compared to rural school
students. And also male students are more aware about pollution than female, (v) urban students and male students are more aware about water pollution, (vi) urban students are more aware about protection and improvement of environment. And there is not much difference between the awareness of male and female students, (vii) rural students are not aware of noise pollution.

2.3 Reflection of Studies:

A perusal of related studies makes it amply clear that a number of studies have been conducted on different components of environmental education. Most of the studies are related to environmental attitude and awareness. But no study has been undertaken to study the Need Assessment of Environmental Education in pre-service and in-service education programmes of DIETs in the state of Himachal Pradesh in view of the emphasis being laid on the efficacy of training programmes in environmental education in the New Education Policy (NPE-1986).

Thus, the present study was selected for investigation to fill the gaps in the available researches on environmental education especially in elementary teachers’ training programmes at DIET level

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