CHAPTER-III

REVIEW OF

THE RELATED LITERATURE
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3.0 INTRODUCTION:

The study and review of past and related researches is absolutely necessary to know how the researches are undertaken in the same field, and which techniques are adopted by the investigators to carry out the research.

The review of the related literature is necessary to determine what was already knew about the subject and to know what researches were done by other researchers and the results obtained. As a result, the researcher had to develop a rationale for the study by reviewed here, form a theoretical basis to formulate the environmental awareness and its enhancement.

It has been observed by the investigator that the research work done in this particular area in environment can be broadly classified under the following heads:

3.1 RESEARCHES RELATED TO ENVIRONMENTAL PROBLEMS:

Brayant and Hunderford (1977) in the experimental research “Evaluated a kindergarten unit, which focused on understanding the term “Environment” and associated pollution problems and their remediation”. Results indicated that kindergarten children could form concepts environmental issues and citizenship responsibility with respect to those issues. Not only were these children able to identify actions, which they themselves could take. According to the researchers, environmental education at the kindergarten level can result in some fairly sophisticated conceptual behavior on the part of the students involved. Indian tradition in the past recognized the inter relatedness between nature and man (Prakriti and Purush).

Mashish (1982) reports that secondary school students are aware of environmental problems, a positive relationship exists between knowledge and attitude towards environmental issues. He also found that giving proper education could increase environmental awareness.
Khoshoo (1984) observed that “A deeper understanding prevailed during the vedic period when Prakriti and Purush were regarded as inseparable and interdependent on each other.” Accordingly in the past, there was a harmony between Nature and Man. If any deterioration as caused in one part, the entire life support system had enough resilience to repair itself and revert to the original state. Nature provides its own mechanisms to restore itself. However, in the last few decades due to technological advancement, a drastic increase in the scale of human activity over the earth has led to the imbalance in the interrelation between Man and Nature. The technologically powerful man of the modern era has controlled nature and started exploiting it. The natural resources which seemed infinite for the relatively small population of the earth, over a considerable period of human history have now started depleting against rapidly rising population. The depletion of natural resources like oil and coal has already created a serious threat to the well being of man. The progress of man has been stagnated by the shortage of raw materials and fuels.

To add to these, in part of the country the environmental problems are created due to industrial pollution and urbanization. Hence creating environmental awareness among the mass of people is the urgent need of the day. The second citizen’s Report (1984-85) amplified the damage already caused to the state of India’s environment. Khoshoo (1984) discussed various plans and actions taken by the Government to arrest the deteriorating situation.

Ambasht R.S. (1985) has measured “the extent to which soil erosion, water run – off and soil nutrients drain down due to overgrazing of lands in the watersheds and river corridors of India”. He found our by his study that the conservation value percentages of many Indian plants which should not be allowed to be grazed or which should be cultivated for soil conservation. According to one report, the loss on account of soil erosion in India is around Rs. 7,000 million and due to floods around Rs. 1,000 million and both these are largely due to destruction of vegetation in the watershed areas resulting in heavy water run – off, heavy silt load, reduction in the water carrying capacity of rivers, etc.
The second citizen's report (1986) prepared by center of Science and Environment in collaboration with 24 voluntary organizations and 54 environmentalists, social workers and scientists from all over India, released last years claims that.

i) If the management is not done properly, India will face social, economic and ecological disaster. The country will find it difficult even to feed the existing population.

ii) Latest satellite data have revealed that India has been losing nearly eight times the annual rate of deforestation put out by the forest department.

At present the most important concerns of the Environmental problems have been identified as:

i) Holistic issues: inter-relationships of population, environment, natural resources, development; environmental economics; human ecology.

ii) Current problems: rapid urbanizations; coastal zone marine and fresh water management, toxic substances dangerous process and hazardous wastes; deforestations.

iii) Emerging problems: Acid rain ozone depletion, carbon dioxide build-up.

Suggestions and Recommendations are as under:

Emphasis must be laid on exchanging information regarding researches, facilitating exchange of experts, making environmental education compulsory at the primary and imparting it through informal and non-formal education, establishment of environment guidance bureau and organization of camps. Literacy rate should be increased to facilitate better understanding of the environment. Teachers, students, social workers must be encouraged to participate in programmes for improving the environment. Environment service scheme may be introduced with a view to teaching regarding environmental problems.
S.L. Kayastha (1987) under Senior Fellowship programme – ICSSR, New Delhi studied “Environmental pollution in Varanasi”. He made an in depth study of perception, problems and management of environmental pollution. He found that the Government sponsored programme could ensure people’s participation, which is crux of any developmental activity. He says that slums continued to grow at the cost of human life and were a cause for environmental pollution.

Manohar Rao P. (1988) conducted “A case study of slum clearance and environmental improvement in Andhra Pradesh” under his Ph.D. programme in the Department of Public Administration, Kakatiya University. Sample consisted for this study is of two important cities of the Telangana region of A.P. i.e., Hyderabad and Warangal. Four slums and 200 respondents form each city, i.e., eight slums and 400 respondents were taken for the study.

The analysis of the date indicated that people living in slum areas lead invariably a miserable life. Illiteracy and unemployment are a few reasons for their miserable life. The people, who are employed, get a meager salary. Being illiterate and unskilled, they cannot aspire for anything better in life, even basic civic amenities are not available to a sizeable section of slum population. The developmental activities had influence on physical environment of the slum areas, but did not alter their life conditions. The people have developed some sort of adverse feeling towards the whole slum clearance programme, which ultimately discourages them to participate in developmental activities.

Raja Mohan. S. (1988) conducted a study on “An analysis of citizens perceptions of administrative response to environmental pollution in Warangal District” under his Ph. D programme in Kakatiya University. Sample consisted of 100 members from Government and its executive instruments (official and non-officials).

The study revealed that the citizen’s awareness about the existing pollution control organizations and officials was very low. Quite a few citizens were apathetic about seeing the help of pollution control administration and citizens were, generally, having a low esteem of public servants dealing with pollution.
The administrator's response to environmental pollution was lukewarm. Although, administrators were aware of the factors contributing to pollution, they opined that they could not discharge their responsibilities on account of corruption, political pressure, lack of civic awareness and assertion, finding constraints and a few other problems.

Bhatia, Prabha, Mahar I.S. and Malhotra S.(1993) investigated "The effects of types of noises on learning and recalling task on Graduate and Post – Graduate students". Sample consisted of 120 Graduate and Post – Graduate students from a population of 300 students.

The sample was given an audio-metric screening test to ensure that only subjects with the normal hearing range were retained in the sample. Multi – group design with six group was employed. Stereo cassette deck and integrated amplifiers were used for recording and playing the noises. A highly sensitive automatic digital multi-meter was used to record the skin resistance. Audiometer, Noise meter, Benedict apparatus was used for measuring oxygen consumption. Systolic-Diastolic blood pressure and pulse rare was also recorded. The selection of noises comprised of factory noise, camp noise, traffic noise, film music and standard laboratory noise.

This study reported the major findings as:

❖ There was significant difference between the quiet and noisy conditions.
❖ The difference among the noisy conditions were however insignificant, showing that all noisy conditions were almost equally disturbing.
❖ Noises in the environment decreased skin resistance, increased systolic/diastolic blood pressure, pulse rate and respiration rate which were indicators of tension.
❖ The content analysis of the subjective date clearly indicated that 40 percent of subjects did not report difficulty in working under some of the noisy conditions, because of the adaptation while the objective psychological data clearly showed that they consumed more energy during noisy conditions. 90 percent reported numbness.
Bhanu Pratap Singh and Bhim Rao (1999) jointly conducted "A sociological study of slums in Agra city" under the ICSSR research project. The findings of the study showed that the growing trends in urbanization and industrialization are responsible for widespread growth of slums and squatter colonies all over the world. They reported that, by and large, the slum dwellers lacked environmental awareness. The slums and squatter colonies had equally affected the physical as well as socio-economic and cultural environment of its residents and in spite of several efforts made by voluntary and governmental agencies for the improvement in the life of these people, there has not been much improvement.

Chandra Shekhar Kumar (1999) made a survey on "Environmental development and human well – being in South Mirzapur region of the state of Uttar Pradesh". This survey reveals that the region has made rapid strides after independence and is still in a developing stage. But, in the proves of development, it is facing resource degradation, and various environmental problems which have adversely affected the well-being of the local people.

Lavakare N.A. (2000) conducted a study on "The impact of environmental hazards on women commuters of local train travel". The sample consisted 221 women, whose age range between 18 to 60 years. An independent 60 item questionnaire, covering environmental factors associated with train travel with reference to psychological and psychosomatic reactions, was constructed and administered. The results of this survey were highly suggestive of the plight and suffering of women commuters due to air pollution, congestion and noise pollution. Similarly they showed more of psychological rather than psychosomatic reaction.

S.P. Sinha and J.P. Sinha (2001) together conducted a study about “The behavioral management on environmental problems”. They concluded that even if environmental education programmes do not change the behavior to a significant extent, they might serve a useful function in reinforcing pro-
ecological behaviours and attitudes in people. In modern society, due to increased demands and social interactions, one is less aware of the outdoor environment. It may be expected that environmental education programme may help in developing environmental awareness and reducing environmental numbness.

3.2 RESEARCHES RELATED TO ENVIRONMENTAL EDUCATION:

The environment is a heritage, that men must preserve and handover to the succeeding generations. In view of the environmental crisis mentioned earlier, environmental education can play a vital role as a tool to influence knowledge, attitudes and values of the people in order to bring about environmental awareness. But the task is so enormous that is this difficult for one country to solve it single handedly. Even for a country it has to be a movement of the people to provide education for the enhancement or preservation of the human environment. However, education for the environment cannot succeed if it is directed to school children alone, because they are not in a position to make many of the decisions needed to preserve the environment. But it might succeed if it deliberately attends to public education on a broader scale. Environmental education must be integrated in formal education at all levels. A dynamic informal programme for Environmental Education is needed to cater to the people at large, in every section of society.

According to a working definition cited by Norman Graves (1975):

"Environmental Education is the process of recognizing values and classifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interaction between man, his culture and his biophysical surroundings. It entails practice in decision making and self-formulation of a code of behaviour about issues concerning environmental quality."


According to the above definition, the process of E.E. helps the learner to understand environmental principles and problems which enables him to identify and evaluate the possible alternative solutions to the problems and assess their benefits and risks. It involves the development of skills and insights needed to understand the effects of interactions within and among various environment. Thus E.E. is a part of the process by which deterioration of the environment can be retarded. E.E. is a relatively new field which is still undergoing important developments in theoretical foundations and practical applications, however the definition above meets with the consents among many educators, environmentalists and others concerning the basis aspects of E.E. The following objectives were derived from this definition:

1. To help learner to acquire accurate and objective information about the environment which may contribute to balance assessment of environmental problems.
2. To develop in him an understanding of the interrelated processes operations in the environment.
3. To give him experience in the techniques of study used by geographers investigating the environment.
4. To stimulate him to examine the consequences of exploitation and adoption.
5. To arouse in him a sensitivity towards the environment.
6. To develop in him a designed to preserve and improve the environment such codes would indicate a positive attitude to the environment.

Leal Filho Walter (1975) examined “An analysis of the logistical and structural problems involved in the under-taking of Environmental Education Programmes in developing countries”. This first attempt to quantify the differences seen in the development of environmental education programmes in the framework of developing countries, simultaneously identifying the priority of each nation give to it was undertaken by the United Nations Scientific Educational and Cultural Organization (UNESCO). The study
(UNESCO, 1975) was the intention was to gather information from various strategies for action at the local, regional, national and international level.

It was based on a questionnaire (177 questions sent by UNESCO to 136 Member states). The level of response was 82%. In addition to the questionnaire supplementary information was provided by official UN statistical documents (UNEP, 1976). The survey showed that the majority to the countries (63%) investigated had relatively strong environmental education needs. Only seven of the countries investigated showed a “very low level” of environmental education needs. There was also a general need for equipment and materials in 84% of the countries. Africa occupied first place, with 31% of such with 15% and finally the Arab states with 11%. Furthermore, the survey found that 63% of the countries needed environmental education programs at all levels (i.e. primary school to university level.)

It is clear from the data gathered by UNESCO’s survey that there is a large difference in the use of environmental education strategies among developed and developing countries. The level of public participation in environmental matters among the populations of both categories of country is also likely to differ, as result of the lack of information about issues related to the environment.

Patel M.D. (1988) examined “Development of training strategies on Environmental Education for primary school teacher in Gujarat.” Following were the objectives of the study.

1. To review the existing situation in primary schools with reference to Environmental Education.
2. To develop a rational for evolving training strategies based on the review and Related literature.
3. To evolve effective training strategies for primary teachers of Gujarat. In order to achieve the above objectives the investigator employed both the survey method and the Experimental method. The sample consisted of 300 primary schools from six districts in Gujarat in view of the criteria laid down by non-probability sampling method. To study the effectiveness of the strategies applied, t-test was used.
According all the environmental studies (ES), teachers of class I-IV and headmasters of the primary schools selected were regarded as the subjects.

The main outcome of the study is in the form of the E.S. training course which could be used for training of E.S. teachers. The sets of materials provided in the course are based on SDL strategies designed to explore newer directions in teaching.

The conclusions of the study are:

1. The trial indicates a positive impact of the materials and strategies on the group of trainees.
2. The strategies related to self-directed learning and containing the elements of self study proved to be more effective than the teaching based on the conventional strategies.
3. This may be attributed to the nature of strategies designed to ensure active involvement of the trainees.
4. The present syllabuses of the E.S. in primary schools, may be reviewed in the light of recent developments in the field of teachers training.
5. The course books in the subject may be redesigned to include practical aspects, tasks and activities, related to the learners, immediate environments.
6. It is necessary to review the components of the E.S. in the syllabuses of primary training colleges. The objectives of the E.S. training course may be redefined and related to the present state and problems in immediate and distant environments.

Sarojini Gopalakrishnan (1992) conducted a study on “Impact of environmental education on primary school children”.

The sample consisted of one thousand four hundred and fifteen children studying in standard V, selected randomly from 30 primary schools. 10 each from Madras, Coimbatore and the Nilgiris, were given the Environmental Education Test (EET) constructed by the investigator.

The findings reported were:

❖ The distribution of the total EET scores of the entire sample approached the normal form which implied that studying EE 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 Coimbatore and the Nilgiris, and this could be due to better exposure of the Madras children.

The study 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-centered activities.

Sahoo K.C. (1992) made 'A critical study of the conception and perception of environmental education'. The philosophical method employing intuition, introspection, reflection and speculation were used in this study. Meta-analysis was used with regard to available literature. Field visits and dialogues with select groups of authors were conducted to fulfil the objectives of the study.

Findings of the study reported were:

- The concept of the environment is broadly divided as natural and man made types.
- Flora and fauna constitute the biotic environment.
- The atmosphere, hydrosphere and lithosphere constitute the a biotic environment.
- Man – made environments are of different types, such as social, economic, political cultural, aesthetic, historical, geographical, psychological, religious and academic.
- The fusion of different types of environment forms the holistic concept of environment. The relationship between man and environment is symbiotic in nature.
- The different stages of evaluation – the hunting – gathering stage, the agricultural stage and the industrial stage – reflect such a relationship.
- Gradually, man’s domination over the environment has created complexities in the man – environment relationship.
- Efforts are continuing with regard to environment management, with focus on unity of life, sustainable development, human welfare, futuristic and cultural progress.
Self - management is perceived as the best formula for good environmental management.

Several workshops, committees and bodies at national and international levels have thrown light on the conceptual analysis of environmental education. Environmental education is a broad concept and is perceived as lifelong experiences for all.

Ashok Sidana and M.P.Pareek (1996) studied “The interest of the secondary school students towards environmental education”. The Sample of the study comprised 1000 students (500 boys from rural and 500 and 500 girls from urban areas) of secondary schools of Jaipur Thahsil and jaipur local city.

The findings of the study showed that:

- Students had good interest towards environmental education.
- There was a significant difference between urban and rural students towards environmental education.
- The rural students possessed more interest than urban students towards environmental education.
- The girls had more interest towards environmental education than the boys.

Ifegbesan Ayodeji (2002) conducted a study on “students perceptions of environmental education elements in Nigerian junior secondary school curricula”.

The sample for the study comprised three hundred junior secondary school Students drawn from ten secondary schools in Ogun state. Stratified random sampling method was use for the selection of the sample. The state was divided into two zones, i.e., Egha/Egbad zone and Ijebu/Remo zone. Five secondary schools from each zone were randomly selected for the purpose of the study. Thirty students were drawn form each school. However, questionnaires of 25 students were not properly completed.
Findings of the study are:

❖ Means of non-formal source was the first source of information to the students on environmental education.
❖ Students possessed low cognition about the environmental education elements in their curricula.
❖ The perceptions of males towards environmental education were not significantly different from their female counterparts.
❖ Study also revealed their preference for an integrated or infusion approach to introducing environmental education into the school system.

Students were willing to learn and participate in environmental friendly programmes organized by government and non-governmental organizations.

3.3 RESEARCHES RELATED TO ENVIRONMENTAL KNOWLEDGE, AWARENESS & ATTITUDE:

Chitwood (1977) in her study, "The effects on 58 enrollees of an eight-week session at a Youth Conservation Camp(YCC)" were measured to determine the relationship, if any, between and among environmental knowledge, locus of control, and environmental attitudes. Pre and post-tests were administered to detect the extent of changes in the variables. Statistical analysis indicated that significant changes, in a positive direction, were attained in environmental knowledge and environmental attitudes, but not in locus of control. She found changes "in environmental knowledge resulting from a camping experience."

V.Anu Radha (1978) conducted a study "on environmental awareness of secondary school students, with reference to sex and type of school". The sample consists of 50 girls having high socio-economic status from IX class public school, and 47 boys and 54 girls from Government schools.

Students were given as pre-test in the month of November and then exposed to learning material specially prepared to bring about awareness about pollution. The learning material consisted of charts, slides, films and transparencies, followed by discussion and lecture. Students were administered
post-test after six weeks of experimentation to find out change in other areas of pollution.

Conclusion drawn from the study were that most of the students were aware of the terms and terminology of water and the hazards of environmental pollution. There was no significance difference between boys and girls in their environmental pollution awareness. But there was a significance difference in the awareness level between students studying in public school and government schools. Direct exposure to the various aspects of environmental pollution illustrated charts and lectures and discussion resulted in a significant increase in the awareness of the students.

Singh (1978) studied on “Students’ knowledge and attitude towards conservation of natural resources”. Sample consisted of 120 students (60 males and 60 females) of IX class from Government Higher Secondary Grade Schools and 84 students (40 males and 44 females) from the Central School. A questionnaire was administered to measure the student’s knowledge of conservation and attitude towards conservation.

It was reported that female students were far more aware when compared to their male counterparts on environmental problems and that a significant difference existed between environmentally educated and uneducated pupils. He found a high positive correlation existed between the awareness and attitude of environmental problems.

Sultan (1979) in her study compared “The environmental knowledge and attitude of students in environment – instructed schools and non – environment – instructed schools”. A test on environmental attitude developed by Masish (1978) was administered on 219 students of 1 X and X class who were selected from the two types of schools.

On comparing the students’ knowledge scores of both kinds of schools, no significant difference was found. But there was significant difference in the environmental attitude between them. In all the seven areas, population, noise pollution, science and technology environmental problems, wild life conservation, natural resources and recycling of wastes, a significant difference was found with students exposed to new curricula scoring higher.
They concluded that teaching of environmental education in the schools helps in the development of environmental attitude of the students.

Iqbal Aziz Muttaqi and Sunirmal Roy (1980) conducted a study about “The changes in knowledge and attitude of students attending an environment oriented biology course in Bangladesh”.

Sample: All the students of grades V, VII and VIII of four selected schools two urban and two rural.

The investigator found that there was a significant difference between the rural and the urban students in respect of attainment in environment knowledge and in grade VI, the rural students seemed to have a less positive attitude towards environment than the urban students and in VII and VIII grades, the rural students showed more favourable attitudes.

Rajput, Saxena, Jadha (1980) studied “The existing awareness towards the scientific and social environment in children”. They developed an environment awareness test. The draft test was first administered on 140 children of class III and IV, and subsequently on 200 children of the same classes but from the other schools. It was administered third time on 275 children of another two schools. Each of the 57 items had a reliability of 0.80, the difficulty index ranged between 25 percent to 70 percent and a discrimination index was more than 0.40.

Bradley Platt R. (1983) studied “The environmental and ecological awareness potential in the organized camp setting”. The purpose of this study was to determine if an organized camp experience resulted in elementary school students having a higher level of environmental and ecological awareness than elementary students who had not had an organized camp experience. The control group was composed of 19 fifth and 42 sixth grades, who had not an organized camping experience. The experimental group included 17 V grades and 6 VI grades who had attended the Alaska centre for the environments camp during the summer of 1983. The New Mexico concepts of Ecology Test, level – I, was administered to both groups. Using a static group comparison design and applying a ‘t’- test for independent samples, it was found that organized camp experience did not significantly increase the level of environmental and biological awareness in V and VI grades. It was concluded that the study should be repeated using large
samples and possible other school systems before precise results could be obtained.

Man Mohan Singh (1984) made a study of "The environmental awareness of high school students in Gujarat". He found in his study that the girl students in the non-coastal regions from high socio-economic status showed better environmental awareness.

K. V. Sarabhai (1984) studied environmental awareness and community participation. (An experiment in evolving processes that people should know for shaping their environment.) The objectives of the study were:

1. Creation of awareness at the community level regarding the local environment, the ecological factors, existing development plans, policies and technological possibilities.

2. Creating of awareness of local environmental issues and needs amongst academicians, professionals, students, administrators, through interdisciplinary and inter institutional forms.

3. Initiation of debates on development and progress.

4. Generation of community participation and involvement in environmental action projects, acting as a catalyst.

5. Development and experimentation with different forums and media for achieving the above.

Achievements/observations:

The chief objective of this study has been to bring about an awareness in the citizens of Ahmedabad, of the various environmental issues that encompass the growing city. A periodical named Amdavadma has been brought out by VIKSAT for this purpose. The magazine is designed to serve as an effective forum of people's concern for their city. It brings out developmental issues in the environmental context. While focusing on major urban issues it has also strove to promote debate on available options. The magazine has been well accepted by the reader community. It had an average of 60 pages with a target circulation. The magazine has been persuading and encouraging people to express their views about the various environmental issues affecting the total development of the city. Continuous research work,
carried out in order to gather material for publication in Amdavadms has resulted in collections of valuable data that have been utilized in the publications.

The subject areas covered in Amdavadms are:
Physical environment, preservation of old monuments, development of new city centers and growth centers, urban growth, pavement dwellers metropolitan plan socio-cultural and economic environment, pollution, education etc.

A number of seminars have been organized by VIKSAT on important subjects in order to focus public attention on various environmental and developmental conditions through discussions. These seminars also provide a common platform to the general public and the authorities for exchanging views in an informal atmosphere.

VIKSAT has also organized mobile exhibitions on environmental pollution in order to make the students in particular, and public in general aware of the problems. The exhibits have mostly been photographs, paintings by school children, write-ups on pollution and un-hygienic habits. The exhibitions are reported to have drawn the attention of a major section of the public. The different locations, for organizing the exhibitions have been carefully decided so as to capture the attention of a maximum number of people whenever the exhibition opened at a new area, a cooperator inaugurated it and delivered a talk on the problem of pollution in the city thereby acquainting the people of Ahmedabad with the plans of the Ahmedabad Municipal Corporation and the actions being taken.

A number of school children have also been involved in tree planting activity around. Their schools and place of residence. This would help in starting a learning process and providing is students with confidence in handling environmental action projects.

"A study of the environmental awareness of High School students in Gujarat" reported by Man Mohan Singh (1984) suggested that girl-students in the non-coastal regions from high socio-economic status showed better environmental awareness. In an article Nanubhai Amin (1985) described the problems of energy crisis in rural areas with reference to the process of rapid industrial development in the state of Gujarat.
Viswanath T. (1985) studied 'Awareness and Sensitivity to environment and human problems through curricular and co-curricular activities at the school level.

Environmental education assumes tremendous significance at all levels, more particularly at the school level. The environmental education could be imparted through both curricular and co-curricular activities.

The following are the suggestive guidelines of curriculum design for environmental education at the school level by researcher:

❖ The flora, fauna and homosapiens.
❖ The naturals institutions: land, water, forests, minerals, oils, sea water, the replenish able and non – replenish able resources etc.
❖ The social institutions: the family, society, customs, traditions, beliefs, values, religions, festivals, etc.
❖ Nature’s beauty: planets, flowers, fruits, animals (including human being), the sun, the moon, the stars, mountains, hills, clouds, rain, lakes, sea etc.
❖ Causes of ecological imbalance: unlimited wants, indiscriminate means, profuse ignorance at the individual and collective levels at the local, regional, national and international levels, population explosion and its demands etc.
❖ Consequences of ecological imbalance: extinction of many species of plants and animals, deforestation, soil depletion, soil erosion, sea erosion, energy crisis, depletion of resources, imbalance in supply and demand, pollution of air, water and noise drought, floods, earthquakes, famine diseases etc.
❖ Possibility of ensuring ecological balance: protection and improvement of environment.

All the teachers, pre-service and in-service are to be oriented to in their responsibility in environmental education, by acquiring the competencies required. It is necessary for teacher to acquire experience, expertise, and resourcefulness and have a sense of commitment for the implementation of the programme of environmental education. It is needless to say that there is the
necessity of having an in-built evaluation to ensure that the environmental education makes its impact on students.

The Lothain Regional Council (1986) referred to various layers of environmental. It pointed out that:

"The environment is much than the immediate neighbourhood or a specific location. Each individual is at the center of a number of interlocking and overlapping environments such as the home environment, the local environment, the manmade environment, the natural environment, the social environment (relationship with fellow men), the cultural environment (pattern of ways of life) and the total environment. (the earth). The total environment relates to the ‘spaceship earth’ in the planetary system; which is the only planet with a like support system and which is rather isolated and unique in the outer space. The life support system consists of the basic elements of air, water, land, flora and fauna which are inter-related and provide sustenance to every living things on that part of the earth which is known as the ‘biosphere’.

Patel A.K. (1986) studied “The effect of reading and discussion on the attitudes of pupils towards environmental awareness”.

The major objectives of the study were to study the effectiveness of reading and discussion on the attitude of pupils towards environmental awareness.

Findings of the study were:

1. There is a significant difference in the discussion pattern of urban and rural students. This difference is in favour of urban student.

2. Significant difference is found in the discussion pattern of boys and girls. This difference is in favour of girls.

3. Significant difference is found in the discussion pattern of boys and girls. This difference is in favour of discussion.

4. There is a significant difference in the environmental awareness of urban and rural students. This difference is in favour of urban students.

5. Significant difference is found in environmental awareness of boys and girls. This difference is in favour of girls.
Gupta (1986) made a study on "Attitudes of teachers towards environmental education". Data were collected from 150 in-service teachers from primary, secondary and junior college levels, who were admitted into vocational course (1983-85) of B.Ed in the University College of Education, Nagpur and 25 lecturers from five colleges of Nagpur.

The findings of the study were:

❖ All the groups of teachers showed a favorable attitude towards environmental education.
❖ The order of favorableness was junior college, secondary, and primary teachers.
❖ The college teachers felt the need for organization of environmental education teaching for the general group and social group of 99 lecturers.
❖ Unfavorable attitude towards some issues on the attitude scale indicated their lack of awareness of the interdisciplinary nature of the subject.
❖ The teachers pointed out constraints like crowded classrooms, lack of time for proper planning of activities, loss of interest in the absence of regular follow-up action etc., in the implementation of environmental education programme.

Patel D. G. (1987) studied "The environmental awareness of the primary school teachers regarding the environmental education" at his M. Ed level. The objectives of the study were to study the environmental attitude of urban and rural teachers.

1. To study the environmental attitude of urban and rural teachers.
2. To study the environmental responsibility of urban and rural teachers.
3. To study the environmental attitude of experienced and inexperienced teachers.
4. To study the environmental responsibility of experienced and inexperienced teachers.
5. To study the environmental responsibility of male and female teachers.
In order to achieve the above objectives the investigator used the ANOVA method. The sample consisted of 100 primary schools of Anand and Borsad Taluka. F test was used to study the effectiveness of environmental awareness of primary school teachers. Findings of the study are as under:

1. Experienced teachers possess more environmental awareness.
2. Male teachers have more awareness about environment than female teachers.
3. Experienced teachers possess more environmental responsibility
4. Male teachers possess more environmental responsibility

Khattar N. (1988) made a study about ‘Systematic studies of fauna in and around Bhubaneswar for development of a museum’. The study attempts to develop a systematic account, and a museum, of the fauna typical of the local area and surroundings. The identification and classification of different animals collected under the project was done and lists were prepared of identified specimens from different groups.

Shahnawaj (1990) made a study on ‘Environmental awareness and environmental attitude of secondary and higher secondary school teachers and students’ at Udaipur. Objectives of the study were as follows:

❖ To determine the extent of awareness about the environment among students and teachers.
❖ To find out the attitudes of teachers and students towards the environment.
❖ To find out the difference between teachers and students and male and female groups concerning the environment.

Findings of the study reported were:

❖ It was found that 95 per cent teachers and 94 per cent students possessed positive environmental attitudes.
❖ The environmental trained teachers and untrained teachers did not differ in their attitudes.
❖ Teachers had more awareness of the environment than students.
❖ Trained and untrained teachers did not differ on environmental awareness.
Girls possessed significantly more awareness of the environment than boys.

B. Praharaj (1991) studied about 'Environmental knowledge, environmental attitude, and perception regarding environmental education among pre-service and in-service secondary school teachers'.

The sample for the study consists of 302 in-service teachers serving in 50 secondary schools and 416 pre-service teachers of three teacher's training colleges in Puri District of Orissa. The 50 schools were selected out of 483 schools in Puri District on a stratified random sampling basis.

Findings of the study reported were:

- The level of environmental knowledge was found low among pre-service teachers, although conceptual knowledge was moderate.
- Among the in-service teachers, environmental knowledge was moderate and factual knowledge about the environment 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 'gender science' also and science subjects in secondary school as well mass media have a potential role to play in imparting environmental education.

Fortner and Mayer (1991) conducted "A longitudinal study of sources of environmental knowledge". The researcher studied the fifth and ninth grades in Ohio School classes were found to be, increasingly, influential in the acquisition of knowledge about the environment. Although students ranked movies and television as the most influential sources of knowledge about specific environmental issues in 1979, by 1983 and 1987 those sources had been replaced by classes in school as being most influential.

Mohammed Saleem Khan (1992) studied "The environmental awareness among students and education and their attitude towards environmental education", as part of his Ph.D., from the university of Rajasthan, Jaipur.
Sample consisted of students and educators of Rajasthan. It was observed that almost all the students of different schools had the same level of awareness and he suggested that effective programmes like quiz, workshop, field trips, mass meida would further improve the level of awareness of the students.

S. Sandhya Pradeep (1993) studied “The role of education in creating awareness of environmental pollution among school children”. The sample chosen was rural children, in the group 13-15 years constitute the most important and effective sample as far as this study is concerned. Simultaneously, on a comparative basis, non-formally educated children who are pre-dominantly workers attending night school, or are those workers (13 – 15) who had attended night schools and have since dropped out.

The study has highlighted that education, though important, has emerged as one of the variables that do not adversely the development of scientific awareness in the non-formally educated children. There was dramatic increase in the level of scientific awareness of environmental pollution in the non-formally educated groups. Their life experiences in the work area has enable them to grasp the matter of environmental pollution.

S. Sundara Rajan and S. Raja Sekhar (1993) made a study of “The environmental awareness among the Higher Secondary Students in Tamil Nadu”. The sample of 468 higher secondary students of which 266 urban students and 202 rural students. In terms of sex, it consists of 252 boys and 216 girls. In terms of the optional subjects they have taken, it consists of 251 Science students and 217 Humanities students. Further, this sample consists of 201 students with high socio-economic status and the remaining 267 students with low socio-economic status.

The study has revealed that the environmental awareness of the higher secondary students in Tamil Nadu has not been influenced either by their location or sex. No significant difference was found between them in respect of their environmental awareness. Similarly, no significant difference was seen between them in their environmental awareness on the basis of their subjects of study or their socio-economic status.
Patel D.G. (1993) conducted “An investigation into the environmental awareness and its enhancement in the primary school teachers”. The objectives of the study were:

1. To find out and determine the various aspects of the environmental studies prescribed at primary school level.
2. To study the existing amount of environmental awareness among the primary school teachers.
3. To develop and implement a programme to enhance the environmental awareness among the primary school teachers.
4. To study the effect of environmental awareness programme in relation to the Demographic variables viz; Area, Caste and Sex.
5. To derive some recommendations for imparting better environmental education of primary school level teachers.

In order to achieve the above objectives the investigator used the ANOVA method. The sample consisted of 200 primary schools of Kheda District. F-test was used to study the effectiveness of environmental awareness of primary school teachers.

Findings of the study are as under:

1. The environmental awareness programme is a powerful tool to raise the E.A. of the primary school-teacher.
2. Pre-acquired initial E.A. plays much more effective role in enhancement of E.A. of the teachers. They acquire high levels of E.A. after execution of the E.A.P.
3. The E.A.P. is an indirect successful mean to develop the E.A. of the teachers.
4. The role of the programme jointly dependent on caste and sex of primary school teachers with reference to E.A.
5. The main effect of the treatment i.e. of E.A.P. is highly significant with reference to E.A.
6. The main effect of the sex plays an important role in raising the E.A. of the teachers: Male school teachers manifested more E.A. irrespective of the area and caste than their counterparts.
7. Most of the first, second and third order interactive effects on E.A. of the teachers are found negligible to a greater extent except the first order interactive effect of caste and sex. This means that there is a joint effect of caste and sex on E.A. of the teachers one is surprise to know that as a main effect only caste does not affect the awareness of the teachers towards environment.

Roli Sabhloe (1995) studied “the awareness and attitude of teachers and students of high schools towards environmental education in jabalput District”. Sample consisted of 1000 students and 240 teachers selected from 16 schools. The parents of the children were also considered in the sampling frame.

Findings of the study show that the boys are more aware of environmental problems than girls and urban students than rural students. Female teachers have more favourable attitudes towards environmental education than male teachers. Teachers have more environmental knowledge than students do. The rural and tribal teachers did not differ in their awareness of environmental problems. But there existed a difference between urban and tribal students, rural and tribal students and students of government schools and private schools and teachers of private and government schools in favour of former in all the categories. Urban parents had more environmental awareness than the rural parents.

G.C. Bhattacharya (1996) studied about “The environmental awareness among primary grade girls and their parents in varanasi”. The sample of the study comprised 110 boys and 180 girl students of grades III and 91 boys and 89 girl students of grade V along with their 269 parents were drawn from five categories of primary schools. The findings of the study showed that they had an average awareness. None was there in the high category in grade III and V.

Nayana, A. Patel (1997) conducted “A study of the effectiveness of Environmental Awareness programme on student teachers”.

The objectives of the study are:

(i) To enumerate the various aspects of the ecological studies prescribed in secondary school syllabus with special reference to environmental education.

(ii) To construct a reliable and valid tool to measure environmental awareness of the student teachers.
(iii) To develop the environmental awareness programme for the student teachers.

(iv) To study the effect of Environmental Awareness Programmer on Environmental Awareness level of student teachers in relation to sex and educational qualification.

(v) To offer some recommendations and suggestions for imparting better Environmental Education in Secondary Schools.

Findings:

1. The present E.A.S. is a valid and reliable tool for measuring E.A. of secondary school teacher trainees.

2. The environmental awareness programme is a powerful mean to develop the environmental awareness of secondary school teacher trainees.

3. The main effect of the treatment ie: EAP is highly significant with reference to EA of the student teachers.

4. All the first order interactive effects (Treatment X Sex, Treatment X Educational qualification and Sex X Educational qualification) are found non significant.

5. Second order interactive effect of “Treatment X Sex X Educational qualification” is found non significant.

Henry K. Chebelyon (1999) conducted a study on “Environmental awareness of B.Ed Trainees of Annamalai University”. The investigator found that there was a significant difference between Graduates and science and arts students in their environmental awareness. In all the cases, there is a great consistency of standard deviation. Regarding the source of information, the mass media, T.V., Radio and Newspaper etc., occupies the topmost ranks followed by the teachers etc. They concluded that provision of mass media is the most influential factor to develop an environmental awareness among trainees and other educated persons.
Dilip. U. Patel (1999) conducted a study on “Environmental awareness of primary teachers in the Dang District of Gujarat”. The sample comprised of 100 teachers of primary school of which 53 are male teachers and 47 are female teachers.

The findings of the study revealed that the level of environment awareness of primary teachers of Dang District was high. Male teachers had a higher level of environment awareness than the female teachers. More experienced teachers had a higher level of environment awareness than the female teachers. More experienced teachers had a higher level of environment awareness than those teachers having experience up to 5 years, and graduate teachers had a higher level of environment awareness than the primary training course teachers.


Descriptive Survey method with Multistage Stratified Random Sampling was adopted to collect the data from the Sample of 1320 Students and 458 Teachers from Rural & Urban High schools.

Objectives of the study were 1) To study the awareness levels of Environmental Concerns among X class Students, 2) To study the awareness levels of X class Students about the Environmental Concerns with respect to Variables-Area, Gender, Type of Schools’ Management, Mother’s and Father’s educational qualifications & Mother’s and Father’s occupational background and Income of the family. 3) To study the awareness levels of Environmental Concerns of High school Teachers, 4) To study the awareness levels of Teachers about the Environmental Concerns with respect to Variables-Area, Gender, Type of Schools’ Management, Educational qualifications & Subjects being taught. 5) To enquire into the opinions of Teachers on the role of Curriculum in creating the Environmental Awareness.

Findings are: 1) Most of the students have moderate level of Environmental Awareness followed by high level of Environmental Awareness. 2) Environmental Awareness of the students is not influenced by Area and Gender. 3) Private School students have more Environmental Awareness than the Students of Govt. Schools. 4) The level of Environmental Awareness
of the students is increased in direct proportion with increase of their Mothers’ and Fathers’ Educational qualifications. 5) Awareness levels of the students with respect to Environmental Concerns is not influenced by their Mothers’ and Fathers’ occupations. 6) Students of professional and unemployed Fathers have more Environmental Awareness. 7) Most of the Teachers have moderate level followed by high level of Environmental Awareness. 8) Female Teachers have more Environmental Awareness than Male Teachers and 9) Environmental Awareness of the Teachers is not influenced by Area, Qualification and Subjects taught by them.

3.4 RESEARCHES RELATED TO CURRICULUM DESIGN, DEVELOPMENT, CONSTRUCTION, STRATEGIES AND IMPLEMENTATION:

Brice, R.A. (1973) studied “A Procedural Model for developing Environmental Education Programmes for teachers of young children. Development of the model revolved around design and evaluation of an instruction unit, which served as a prototype for testing proposed development strategies of the programme. Development of the prototype design evolved procedures and instruments for:

1. Selecting and using an interdisciplinary panel of experts to help develop and evaluate proposed unit.
2. Incorporating children’s responses to certain activities as formative evaluation of proposed teaching methods and materials.
3. Selecting and evaluating instructional media for presentation of unit content.
4. Providing continuous formative evaluation of an integral component of instructional units.

Evaluation of the Prototype was accomplished through application of instruments, based on criteria specified for effective environmental education, and on objectives related to the unit – “Constructing wood land Terrarium”.

Evaluative data were collected from the interdisciplinary panel and from selected groups of educators. Responses of panel members to the prototype were recorded on a closed item questionnaire with a rating scale format, designed to collect data regarding effective use of media, relevant content, accuracy of ecological concepts and appropriateness of suggested methods and materials for teaching young children.

The findings of the study revealed that:

- "The prototype" satisfied the criteria specified for effective environmental education, and the procedures designed for the study offer a viable strategy for developing effective environmental education programmes for teachers of young children.
- A synthesis of suggested procedures, which resulted from the analysis of the data, was organized to provide a model for developing environmental education programmes.
- The model includes 23 identifiable steps organized in three implementation stages –

  (a) Problem specification & planning.
  (b) Research & development.
  (c) Unit evaluation.

Vogl S. W. (1973) studied "Attitude change in in-service teachers towards the Great Lakes region in response to lectures or individualized inquiry and retrieval (Environmental sciences)".

This study was designed to develop two formats for a course of study on Great Lake – water resources and to determine, which of the two – Lectures or individualized inquiry / retrieval (II/r) helped to develop more positive attitudes towards the great lakes as a unified system in a class of in – service teachers.

A pre-test and post-test to determine initial and concluding attitudes towards the Great Lakes region was used. Results of the test were analyzed by various statistical techniques. Although, each group’s mean pre - test and post – test scores fell within the range of scores indicating positive to strong positive attitudes towards the region. The mean post – test score for the lecture group
was significantly higher than the group’s mean pre-test score, while the slight increase in mean score for the (1/r) group was not statistically significant.

The study reveals the findings that:

- No relationship was found to exist between test score and age, sex, marital status, grade or subject taught, number of hours previously earned in biology, geology or sociology or previous exposure to an environmental studies course.

- Statistical analysis of the pre-test and post-test scores for the two groups indicated that the lecture groups measured attitudes towards the Great Lakes region increased significantly, while the (1/r) group’s measured attitudes increased slightly. Additional tests between the pre and post-test scores revealed that no significant difference existed between the two groups on final measured attitudes.

- Although, differences in responses to the lecture and (1/r) techniques generally were not statistically significant, a trend for each group, to some what, prefer the format under which they had studied, seemed to exist. This tends to uphold a basic assumption of attitude theory people tend to accept or develop positive attitudes toward those things with which they were familiar.

- Members of both groups felt that a combination of lecture and individual work would benefit them most.

Supreka and Harms (1977) in their comparative study on “Two methods of presenting environmental education to determine their effects on students’ knowledge and attitudes toward energy and environmental issues.” Eight teachers used an inquiry (non-value-oriented approach, and eight others used a values oriented approach to teach six-week environmental education unit to more than 600 high school students. Both treatments were found to produce significant cognitive gains, compared to the control classes. The authors suggested that there was no difference in students’ gain in knowledge between the two approaches and only a slight difference was found in attitudes toward environmental issues.

Hepburn (1978) studied “The effects of using an interdisciplinary approach as opposed to a traditional approach for examining problems”. Her findings revealed differences in post-test scores between science/social studies
modules of instruction involving ninth-grade and slower tenth grade students. Comparisons were made at each grade level across four treatments: a science module, a social studies module, an interdisciplinary module, and a control treatment. Results indicated that the interdisciplinary treatment groups attained the highest mean gain scores.

Case (1979) undertook a study “To determine the effect of an integrated eight-week environmental education curriculum integrated into the regular school curriculum”. The sample of his study were sixth-grade students of a Seventh-day Adventist School who were randomly selected and assigned to three groups. Group A was treated with an integrated curriculum for five weeks, one week of a resident field experience, and an additional two weeks of integrated classroom curriculum. Group B was treated with only the integrated curriculum for eight weeks; Group C acted as a control group, receiving no environmental curriculum activities. A test was constructed to measure environmental knowledge.

He found that on the knowledge test, statistically significant difference in favour of the B group were found in comparison with Group A and with Group C. No significant difference was found between Group A and C.

Andren (1979) studied “The effectiveness of a problem-solving module in aiding participants in understanding and solving environmental problems”. He chose community college students as the study sample. The problem-solving model consisted of 21 questions grouped into six areas of problem identification, historical context, and proposing and testing solutions. An analysis of the contents of the student’s investigative reports indicated that the experimental group discussed economics, law, transportation issues, and population issues to a significantly greater extent than did the control group. It was concluded that this model was useful in systematically focusing student’s attention on some of the necessary components of environmental problem solving.

T.S. Rajput, Saxena A.B., and Jadhao V.G. (1980) have undertaken a study on “Environmental approach of teaching at primary level in Madhya Pradesh”. The study was conducted in 3 distinct phases; the sample consisted of 200 children from III and IV classes. In the first phase, the Madhya Pradesh state curriculum for classes III and IV was redesigned to build scope for environmental awareness test. The third phase was the experimentation phase where the effect of
implementing the redesigned curriculum was assessed on environmental awareness and achievement in science.

The study revealed that only one of the four groups (2 schools x 2 classes) was significantly different on environmental awareness at pre-test stage, whereas at post-test stage, two experimental groups were significantly better than the control group.

The difference between the experimental group and the control group on a traditional achievement test was not significant. They concluded that child-centered approach was a very essential approach at primary stage.

SCERT-Andhra Pradesh (1980) conducted a study on “Evaluation of textbooks in environmental studies of classes III and V based on revised curriculum of science in 1980”. The sample of the study consisted of 20 Headmasters, 200 teachers and 100 educated parents of the pupils.

The findings of this study that Head masters and teachers felt that old curriculum was not relevant to the child’s cognitive level as well as needs, but contrary to this, the parents felt that the old curricula was easily understandable to the children and new curriculum increased the cognitive load of the children. The parents, teachers, and Head masters indicated that the new curriculum was relevant to the needs of the children.

B.P. Joshi (1981) worked on the development of science education for upper primary classes, based on the environment approach in the State Institute of Education (S.I.E. Rajasthan)”. Sample consisted of 18 blocks from each region. And 5 percent of the upper primary schools from each block and in each block 50 percent of the selected schools formed the control group. From each school, one section from each of the classes VI, VII and VIII were included in the study.

The major findings of the study were: Environmental Education at the upper primary level was essential and vital to develop insight and skills and skills were needed to influence not only the environmental attitudes and behaviour in the students, but also to stimulate their re-orientation of values regarding the importance of environment studies. The environment outside the school was potentially significant for education purposes. The existing syllabus was not environment oriented, lacked in field studies, did not contain information with regard to various aspects of environmental education and did not have relevance to real life.
Pai, S.G. (1981) did his work on “Preparation and Tryout of Curriculum in Environmental Studies Leading to Lifelong Education for College Students”.

The main objectives of the study were: (i) to help students acquire an awareness of the interrelationships, interactions and interdependence existing between biological and physical aspects of the total environment and sensitivity towards the environment and its applied problems, (ii) to help students acquire strong positive attitudes, sound ecological values towards the needs for a better environment and the necessary motivation for actively participating in its protection and improvement, and (iii) to help students develop skills necessary for solving environmental problems and taking preventive measures.

In the first phase, the curriculum was developed by studying and analyzing the existing literature on curriculum development, the concept of lifelong education and environmental education. The draft curriculum was modified after the preliminary tryout. The study employed pretest-posttest experimental-control groups design. Seventy-two students in the experimental and eighty students in the control group were involved in the study. The data were collected using Environmental Achievement Test, unit test, Environmental Attitude Inventory and Environmental Activities Inventory. The collected data were analysed using t-test.

The findings of the study were: (i) There was significant difference in the performance of the experimental groups as compared with control group on knowledge scores and attitude scores. (ii) The experimental group had gained more than the control group in environmental activities inventory, indicating effectiveness of the curriculum. (iii) As a result of instructions for using the curriculum, students reflected clearer and more vivid images perceived in terms of their sensitivity towards the environment. (iv) Unit-wise analysis of the performance of the students in the experimental group showed they had gained in-overall knowledge in environmental problems as a result of instructions for using the curriculum.

Eshan, Md. A. (1985) conducted “An Evaluative Study of Environmental Education Programmes in the Primary Schools of Bangladesh”.
The specific objectives of the study were (i) to examine the nature and scope of the existing environmental studies (science) programmes in order in respect of the following components (a) objectives, (b) content, (c) teaching learning strategies, and (d) instructional media; (ii) to evaluate these components of the existing programmes in order to determine their strengths and weaknesses on the criteria given below: (a) Evaluation of objectives against the criteria: whether stated clearly, precisely and in behavioural terms, coverage of cognitive, psychomotor and effective domains, whether appropriate and attainable, built up on pupils pre-programme level of understandings and important for further learning, (b) evaluation of content against the criteria: relevancy, clarity, up-to-dateness, suitability to learners need, interest, ability and experience, sequencing, content and in behavioural balance, development of scientific attitude and process skills, (c) evaluation of teaching-learning strategies against the criteria: whether leading to the attainment of objectives, whether helpful to provide guidance with regard to teaching methods, appropriate to the age, ability and interest of the children and use of strategies in the class during the environmental studies lessons, (d) evaluation of instructional media against the criteria of being relevant and interesting, feasible and practical for use.

The survey method was employed in the study and conducted in three phases. The first phase was concerned with environmental studies (science) for classes III, IV and V. The second phase was solely concerned with opinion study of primary school teachers and teacher educators. Here a sample of 107 respondents was taken; of them 32 were primary-teacher educators and 75 primary school teachers. The data were collected through a questionnaire for both the primary teachers and teacher educators. Third phase was concerned with the development of modified programmes in environmental studies (science) for classes III, IV and V. A validity assessment questionnaire was used for both the primary teachers and teacher educators.

The findings of the study were: (1) The general programme objectives of teaching environmental studies (science) had not been stated in the existing programmes. (2) Although there was a mention of a few instructional objectives for each class (III to V) then objectives had not been stated clearly, precisely and in behavioural terms. Most of these instructions objectives
appeared to cover the cognitive domain only. (3) All the respondents preferred to see modification in the instructional objectives and, according to them each objective should be specific, stated in behavioural terms, with stress on the cognitive, psychomotor and effective development of the children. (4) All comet units of classes III, IV and V were suitable to the leavers needs, abilities, interests and experiences. (5) The sequential arrangement of the content units of class III, IV and V programmes were not helpful to develop pupils understanding. (6) The survey showed that although there was a balance of content between physical and biological sciences in the programmes of class and IV, little content balance existed in the class V programmes. (7) Respondents agreed that the programme contents of classes III, IV and V needed to be modified so as to make them more specific, clear and explanatory the contents also needed to be psychologically and logically organized in order to maximize learning. (8) For the newly developed programmes, results indicted that every programme objective was an acceptable objective of environmental studies which confirmed the validity of the programme objectives formulated by the researcher. (9) The set of programmes and objectives had fulfilled the categories of environmental education objectives as recommended by the UNESCO conference held at Tbilisi (USSR) in 1977. (10) According to the panel of experts instructional objectives appeared to cover the cognitive, psychomotor and effective domains. This showed that the modified programmes would help to promote balanced development of the learner's behaviour in the three domains. (11) All the content topics of the modified programmes were up-to-date and suitable to the learner's needs, interests, ability and experience. (12) Responses indicating that the sequential arrangement of the content in units would help in developing pupil's understanding. (13) The experts felt that the contents of the modified programmes would offer 'content balance' between the physical and science units. (14) The strata suggested in the modified programs teacher in the school. (15) All the experts felt that the suggested instructional media has been taken into account though locally available low cost materials.

The objectives of the study were (i) to compare the cognitive achievement of students of classes V, VIII, IX and X towards science taught through the environmental versus the traditional approach, (ii) to compare the environmental awareness and attitude of students when taught by the above two methods, and (iii) to compare the attitudes of the teachers towards the environmental approach of teaching. The investigator formulated hypothesis around the dependent variables related to knowledge, understanding, and application scores, environmental awareness scores, attitude towards environmental approach.

The study employed a two-group design having the environmental approach in the experimental group and the traditional approach in the control group. The study was conducted at three levels: primary school, middle school, and higher secondary school. At the primary level, 50 schools having 500 students and 100 teachers in the experimental group and another set of 50 schools, 500 students and 100 teachers in the control group were included. At the middle level, the experimental group consisted of ten schools 250 students and 40 teachers and the control group also included another ten schools, 250 students and 40 teachers. At the higher secondary level, the experimental group included one school, 125 students and ten teachers and control group at this level also had one school, 125 students and ten teachers. The experimental group represented project schools assisted by UNICEF and NCERT. The non-project schools formed the control group. The control group schools were within the vicinity of 10 km of the project schools. The curriculum was chosen from the Hoshangabad Science Teaching Programme (Kishore Bhand).

Some of the sample topics were root, stem, leaf, crops, earth, soil, animals, personal hygiene, health, and disease. Three types of tools were standardized. These were achievement tests for classes V, VIII, IX and X; attitude scale for class X; and attitude scale for teachers towards the environmental approach. Statistical techniques such as mean, standard deviation, and test were worked out for testing the hypothesis.
Some of the major findings were: 1. The students of the experimental group of classes V, VIII, IX and X obtained higher achievement scores due to teaching of science through the environmental approach. 2. The environmental approach showed greater cognitive gain in knowledge, understanding and application of science concepts related to environmental education at primary, middle and secondary school levels. But it was good effective in the teaching of factual recall type concepts at middle and secondary school levels. 3. The students of primary schools of the experimental group showed considerable improvement towards environmental awareness. 4. The environmental attitude inventory showed significant positive gains in attitudes onwards the environment for the entire experimental group of students. 5. The obtained value of t showed that teachers of the experimental group of schools had a very high positive attitude towards the environmental approach for teaching science. 6. No significant difference between male and female teachers attitudes towards between male and female teachers attitudes towards the environmental approach revealed that sex had no effect on the attitude towards the environmental approach. 7. There was no significant difference between the attitudes of teachers towards the environmental approach followed at different grade levels.

The educational implications of the study are:

1) The teacher can use the environmental approach for improving the teaching-learning process. 2) This study will be highly useful to the teacher educators to train the pre-service and in-service teachers in science teaching through the environmental approach. 3) Environmental awareness developed in the students as result of the environmental approach will help in the quality improvement of the environment. 4) This study will help in the development of positive attitudes in students towards environmental protection. 5) The study will also be useful for curriculum framers and administrators in the fields of environment.

M.D. Patel (1988) worked on Development of training strategies on environmental education for primary school teachers in Gujarat. The sample consisted of 300 primary schools from six districts in Gujarat in view of the criteria laid down by non-probability sampling method. To study the effectiveness of the strategies applied, t-test was used.
Accordingly, all the Environmental Studies (ES) teachers of class I – IV and the selected headmasters of the primary schools were regarded as the subjects.

The conclusions of the study were:

❖ The try-out indicates a positive impact of the materials and strategies on the group of trainees.
❖ The strategies related to self directed learning and containing the elements of self study proved to be more effective than the teaching based on the conventional strategies.
❖ This may be attributed to the nature of strategies designed to ensure active involvement of the trainees.
❖ The present syllabus of the ES in primary schools, may be reviewed in the light of recent developments in the field of teacher training.
❖ The course-books in the subject may be redesigned to include practical aspects, tasks and activities, related to the learners’, immediate environments.
❖ It is necessary to review the components of the ES in the syllabus of primary training colleges. The objectives of the Es training course may be redefined and related to the present state and problems in immediate and distant environment.

Prem Krishna Khanna (1988) conducted “A study of the flora of Bhopal to produce resource material for the biology teachers of Madhya Pradesh”. A study of all biology textbooks prescribed in Madhya Pradesh for classes IX to XII was undertaken to prepare a list of plants useful to biology teachers.

The findings of the study were as follows:

❖ The Latin, English and local names of each of the plants were searched out.
❖ Classification of the plants according to the widely followed system of classification of Bentham and Hooker was done. This provided an exhaustive list of plants which are often quoted as examples in biology textbooks.
❖ From the list, 123 most commonly used plants were described, with diagrams to help teachers in their identification.
The important characteristics of plants, their penology, points of identification and common names were also given. Further, a chapter on the ecological characteristics of Bhopal was written on the basis of a study of various ecological factors such as history, geography, vegetational features, climate and topography. This chapter is a very useful introduction for learners to the flora of Bhopal.

L. Antonysamy (1989) conducted a study about “Teaching environment concepts to schools dropouts through video and charts”.

The sample of the study constituted 60 working children at the school for working children in Dindigal. The pre-test-equivalent-groups design was employed. The experimental group was taught video lessons on ‘Environmental Concepts’, and the same lessons were taught to the control group using charts. A video programme on ‘Environmental Concepts’ lasting for 40 minutes was produced for this study. The ‘t’ test was applied for statistical analysis.

Major findings were as follows:

❖ 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 studies approach of Parisar Asha in municipal schools in Greater Bombay’.

The sample consisted of student of Standard I and Standard II to assess their learning achievements. The sampling was done in 29 BMC schools. In all, 429 students form 30 divisions of Standard I and 292 students form 27 divisions of Standard II were selected.

Findings of the study reported were as follows:

❖ Parisar Asha has gained momentum within a short period by way of organizing various programmes for implementing the EVS approach to learning in a large number of schools of varied kinds.
❖ There is a need to have departmental heads for the three units of training.
❖ The training personnel in charge of training programmes for teaching in the BMS schools were aware of their role and functions.
❖ The major difficulty experience by trainers was the teacher’s irregular attendance in the training sessions.
The monitoring system, which was introduced by Parisar Asha, helped to get feedback on the functioning of the EVS project.

The officials in the BMC Education Department played a significant role and had a good understanding of the EVS approach.

The headmaster’s involvement in the implementation of the EVS project in BMC schools was appreciable.

The teachers of Standard I played a Satisfactory role in implementing the EVS approach.

The teachers of Standard II had a favourable opinion about the EVS approach and they made efforts to use this new approach in their classrooms along with the traditional method of teaching.

A. Susila Devi (1990) made a “study of the environmental curriculum in Andhra Pradesh”. The data was collected using the survey method on a sample of 377 primary school teachers from three geo-politically distinct areas of Andhra Pradesh, viz. Coastal Andhra, Rayalaseema and Telangana, involving two representative districts from each, i.e. East Godavari, Guntur, Prakasam, Nellore, Warangal and Medak.

Major findings she reported were:

The Environment studies (EVS) curricula did not cater to the essential needs of learners 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 experience that link children’s school-based learning with their environment and the universe.

Chitranged Upadhyay (1991) conducted a critical study “on the possibility of implementation of Environment Education as an effective remedial measure for the problem of pollution with special reference to Madhya Pradesh”.

He observed that the field of environmental education is not fully explored. A few workshops were organized and work was going on at the higher level only. These deliberations have not reached the masses so far. The scope of work in the field is very wide. They have only touched the fringe of the movement. Hence, he suggested few topics for further study and investigation.
Zeenat Kidwai (1991) conducted a study on ‘Development of an environmentally-oriented curriculum in geography at secondary stage’. The study addressed the problem of environmental education for protection and conservation of the environment.

Development of the geography curriculum has been attempted on the ecosystem concept, dividing the environmental components into lithosphere, hydrosphere and biota (including the human population). A framework for an environmentally oriented geography curriculum at secondary stage was presented as a result of the study.

S. k. Sudha Rani (1994) made ‘A study of the problems faced by teachers at primary stage for teaching environmental studies through Child-Centered approach’. The sample consists of 75 primary schools (Government, Aided and Unaided) and 57 teachers in Hyderabad District.

Findings of the study were as follows:

❖ Majority of the schools do not provide the copies of syllabi to the teachers for their reference.
❖ The Hand-books for teachers in the subject concerned play a vital role for planning and organising class room work effectively.
❖ There is a positive response from most of the teachers towards child-centred approach of teaching.
❖ Field trips are organized occasional.
❖ In majority of schools students are not exposed to tele-lessons and radio-lessons.
❖ Demonstration model lessons are not oriented towards child-centres education in most cases.

Educational officials stated that Child-Centred approach is very essential approach.

Indira Seshagiri Rao (1994) worked on “Development of a model of teaching on the basis of environmental study approach for the all round development of students of middle school”.

The sample consisted of 12 schools in A.P., some in urban, some in semi-urban and some in rural. The location of urban schools was in Hyderabad and Secundarabad, semi-urban in the towns of Warangal, Nizamabad and Guntur. The rural schools were in Janagaon and Bimmaravaram. Most of the schools were
following CBSE syllabus. Schools with boys and girls to avoid discrimination of sex organized by private management.

The findings of the study reveal that the 'Environmental Study Approach' as a teaching/learning model has been proved very effective.

Ummed Singh (1995) prepared "Video Instructional package to develop environmental awareness in secondary schools". Students from standard VII and VIII of Hindi Medium schools of Gujarat, Rajasthan and U.P. were selected as the sample. In all, 180 students were selected from three schools. The content of the package consisted of meaning and types of four environmental pollution. The developed video instructional package was found significantly effective for the students of standard VII. In spite of some limitations, experts evaluated the package of class VIII as a laudable attempt.

Young, Stephen Pui-Ming (1995) made "A empirical study on environmental consciousness and geography teaching in Hong Kong". The researcher examined the relationship between the teaching style and emphasis on environmental objectives of geography teachers, and the environmental consciousness of Hong Kong students at school – leaving age. Overall, the highest level of students environmental consciousness was related to a mixed teaching style and pattern of emphasis.

Anne-karin Thomson (1995) conducted an action-research project on an approach towards integrating the school's outdoor environment into the formal curriculum. The author set out to look at how group activities can be developed to encourage children's environmental and social awareness using story-telling and investigations in a school's meadow garden. The study was awarded S.C.R.E. Practitioner prize in 1995.

The investigations in the school garden were part of a large project, piloting one approach to developing a whole-school strategy for environmental education. Most aspects of this project involved an ecological way of thinking. An eco-centered approach requires that concerns for human progress and concern for nature are intrinsically linked. This does not imply an overall consensus to what the end product of the particular development in question should be. It rather emphasizes the need for a product of the particular development in question should be. It rather emphasizes the need for a consensus regarding how to handle the dynamics of the process of the development.
This foundation should be the concept of needs. Too often understandings and attitudes regarding needs fall into a category of charitable qualities. Needs are linked to dependence, but how we think of dependence is culturally defined thought of in a hierarchical setting, the fulfillment of the needs of the weaker is dependent on the attitudes of the stronger which is then automatically thought of as the more powerful. This hierarchical view can easily be translated into how society in general thinks of needs and how these are reflected in policies produced by social institutions. When we include the natural environment as a component with needs, then who is weak and who is strong becomes a clouded issue. That humans are powerful, is in little doubt. We are the only species to change our natural environment in forceful way to suit our needs. What is clear, however, is that our power to change nature to rectify global problems is distinctly limited. The linked development of social and environmental awareness is about re-examining these relationships.

R. Vaijayanthi (1996) conducted “on curricular intervention for the growth of environmental awareness at the primary level”. Sample consisted of 95 students in total, who were selected from only one English Medium school. 45 students of one section were taken as the experimental group and 45 students of other section as the controlled group.

Findings of this study shows that the experimental group children fared well. Their approach towards environmental degradation was outstanding and they also took up a project work to bring public awareness about the fluorine content in drinking water.

Ravindranadham (1996) conducted “An evaluative study of the scheme of environmental orientation of school education” under his Ph.D. programme in the Department of Education, Osmania University, Hyderabad. The sample consisted of the following four distinct stratas of the populations. First strata consisting of the professors, the lecturers who were working in S.C.E.R.T, Hyderabad and others who had taken part in the orientation training programmes as a resource person or as a participant. The second strata consisting of the lecturers and the principals who were working in DIEs and the Head masters and senior teachers working in schools, which were situated in the project districts and who had participated in the orientation programme.
Third strata consisting of the Head masters of primary and upper primary schools where the scheme was implemented and the final strate consisting of the Mandal Education Officers under whose administrative control the project schools were functioning.

The reported findings of the study were as follows:

- The Government of A.P has established a state level cell in S.C.E.R.T, Hyderabad and four project level cells in the offices of District Educational Officers of Rangareddy, East Godavari, Vijayanagaram and Chittoor district.
- Three orientation programmes were organized for 98 teachers belonging to the science and social studies faculty.
- The lectures with group discussions, paper readings followed by discussions, supply of enriched material, field trips, were reported to be principal communication modes of resource persons.
- Several workshops in different spells were organized to develop enrichment material in environmental education for classes III VII. Many activities were taken up at the school level.

Mandal educational Officers expressed their satisfaction in the implementation of the programmes and stated that they had visited the schools as frequently as they could, during the period of programme implementation.

C. Janakvalli and Sorajini Gopal Krishnan (1998) studied “The Impact of Multimedia approach in Teaching Environmental Education at the secondary level”. A total of 540 students form four standards (sixth, seventh, eighth and ninth) form two schools in Coimbatore town of Tamil Nadu were selected as the sample for the study. The students of each standard were grouped into three groups, in which each group was consisting 45 students. Of these three groups, two groups were treated as experimental groups and one group was treated as control group. One of the experimental groups was exposed to audiovisual method and the outer to multimedia method, where as the control group was exposed to traditional method of teaching.

The basic fundamental measures of central tendency and variability of pre-tests and post-tests of all four standards indicate a uniform trend that there is a difference among the means of pre-tests and post-tests of audio-visual and
multimedia when they are compared with the traditional group. It was concluded that although media, audio-visual and multimedia had an impact upon the achievements of students in environmental education among the two media groups, multimedia group has an edge over the new concerns for the individual learner and the new ways of presenting information using the appropriate media especially multimedia would certainly help the teachers to create a conducive classroom situation and an effective design for instruction.

J.S. Rajput (1998) conducted "A research study for identification of teaching skills and training strategies for implementation the environmental approach at primary level". The sample under the study consists of children of standards III and IV of 10 Hindi Medium schools of Bhopal City. Findings of the study reported were:

❖ The mean score of environmental awareness for the experimental and the control groups at pre-test and post-test level indicated that out of 14 comparison groups in seven schools, nine groups had no significant difference, and the remaining five groups had a significant difference and remaining five groups and had a significant difference as a result of the treatment.

❖ The results of comparison between the groups and within the groups indicated that out of 14 groups, five groups had no significant difference in both cases.

❖ The significant differences obtained in some groups did not follow uniform pattern.

Sabita Prava Pantnaik (1999) conducted a study on "Relationship of study habits and achievements motivation with attainment of MLL's in environmental studies-II". The sample included 281 students of 6 primary schools of primary schools of Mysore City studying class III.

The overall result indicates, though not statistically significant but, a positive relationship between achievement motivation and attainment of number of MLL competencies exists in EVS-II. A mismatch between parental expectation and the capabilities of their children was also found. Absolute relationship between students study habits and attainment of number of MLL-II competencies in EVS-II exists but was not statistically significant. It was
suggested that evaluation has to be competency-based and text books of EVS-II has to be redesigned and guidance to parents by teachers has to be given.

L.N. Pandey, V.P. Gupta and S.K. Gupta (2000) conducted a study to find out “The efficiency of remedial teaching strategies for development of competencies in EVS-I in children studying at NFE centres in Rewa district of Madhya Pradesh”.

Children who had been studying in class IV in the formal primary schools and at the NFE centres for at least one year, who had reached the level equivalent to class IV as reported by the NFE instructors, were selected for the learning achievement test. The achievement test was administered on 500 children (250 boys and 250 girls) of 104 NFE centres of Rewa district, who were selected randomly from both the urban and rural areas.

It was found that average over all development of all the competencies are far below the mastery level of learning. Remedial teaching strategies have been suggested and the impacts studied on an experimental group.

Non-development of reading and writing skills in children clubbed with non-availability teaching, learning and writing materials, absenteeism of teachers / instructor form schools / NFE centres and lack of enthusiasm in them were found as the major reasons for poor performance of children.

Sneha Joshi and Archana Tomar (2002) studied “Innovations in Teaching Environmental Science at Primary Level”. The teacher teaching in class IV and all the students of class IV from a school consisting of large number of students form the lower socio economic background was taken. The design scheduled for the study was single group pre-test and post-test design. It was found that the difference between pre-test and post-test scores for all the units and all types of tests was significant, which clearly indicates the overall effectiveness of the Intervention Programme.

The methods liked by most of the students were role-playing, team teaching, puppet and story telling. Teachers also opined that the programme helped the students in the process of self-learning and also enabled them to involve themselves in learning proves with a lot more interest and curiosity. It was concluded that such intervention programmes can help the students to achieve the objective not only related to lower level of cognitive ability but
even higher abilities related to meta-cognitive, psychomotor skills as well as affective domain.

Raysing B. Chaudhari, (2004) in his paper “Enriching Curriculum using Local Wisdom” pointed out that Curriculum is indeed as the heart of the educational process. Curriculum provides a medium of interaction between the teacher and the students. It is an instrument to bring behavioural changes in the pupils. Different subjects are included in the curriculum to impart comprehensive knowledge to the learners. Curriculum must stand on the pillars of relevance and excellence. Besides, a dynamic and meaningful curriculum has to be responsive to the needs and aspirations of the society also. As the needs and aspirations change, curriculum must be revised on a regular basis to accommodate the changes, new issues and innovations. Curriculum-the lifeline of every educational process not only derives its shape, identity and direction from educational objectives, but also reflects them. Any programmed of professional preparation should fulfill the requirements and expectation of the profession. In this sense, the curriculum should be purposive and functional so that it can attain the objectives of the profession.

Bhuvnesh Singhal, (2004) in his paper “Curriculum framework for school education”, stated that Curriculum is not static but a dynamic phenomenon. A meaningful and useful curriculum has to be responsive to the society reflecting the needs and aspirations of its learners. Now many new values have emerged in response to the fast changes in the social scenario of the country. As well as world. The curriculum must stand on the three pillars of relevance, equality and excellence.

School curriculum has to aim at enabling learners to acquire knowledge, develop understanding and inculcate skills, positive attitudes, values and habits conducive to all round development of their personality. In this context some general objectives for school curriculum are such as:

To develop capacity not only to process information’s but also to understand, reflect and internalize and develop insight.

To understand the positive and negative impact of the processes of globalization, liberalization and localization in the context of country.
To develop appreciation for the need of a balanced synthesis between the change oriented technologies and continuity of the country’s traditions and heritage.

To develop deep sense of patriotism and nationalism tempered with the spirit of Vasudhaive Kutumbakam.

To sensitize teachers toward the promotion of school cohesion, international understanding and protection of human rights and rights of the child.

To empower teachers to cultivate rational thinking and scientific temper among students.

To enable teachers to experiment with new ideas.

To establish integration of theory and practice of education.

To transform student teachers into competent and committed professionals willing to perform to identified tasks

To cultivate proper understanding of and attitude towards healthy, sex related issues and respectful attitude towards members of the opposite sex.

To develop managerial and organizational skills.

In order to achieve above-mentioned objectives restructuring school curriculum is our basic need. NCERT has taken a right step in this direction by proposing a new school curriculum.

Dr. Mamta Patel, (2004) in her paper, “Curriculum: Different aspects” pointed out that it is expected from the teacher that he should not depend only resources available in the school; but he should also give thought to use the local resources available in the society. The resources of the society is not limited to material enriching teaching learning process but human beings who can help teachers in enriching and understanding the content of the topic.

If educational institutions are thinking to prepare students for the 21st century, teachers will not have to depend only on curriculum but on integrated
curriculum. So training colleges will have to change their curriculum to meet the demands of the teachers related to interdisciplinary/integrated curriculum approach.

There are three major factors, which influence the curriculum as: (1) National (2) Local and (3) School. So teacher will have to meet the needs of nation as well of local.

There are three major aspect which make a curriculum an ideal curriculum: (1) functionality, (2) flexibility, and (3) freedom. So teacher will have to meet the individual as well as industrial needs. This would be only possible if teacher make an attempt to use the human and nonhuman resources available in the society.

The subject teacher is the key person to give justice to a curriculum. The different roles to be played by a subject teacher giving justice to curriculum are as under:

(1) Teacher as a learner (2) Teacher and understanding about curriculum (3) The teacher as philosopher (4) The teacher as curriculum tester (5) The teacher as Didactic user (6) The teacher as implementers.

If curriculum has to fulfill the expectations of the local people and educators, researchers, etc. the teacher will have to play above roles.

Meena Sharma (2004) in her paper “Enriching Curriculum : Using Local Wisdom”, mentioned that Teaching-Learning process has occupied an important place in the field of education. To fulfill the aims and objectives of education we must try to enrich our curriculum. The latest slogan in education in all the progressive countries is “Let us study the community, use the community, serve the community and involve the unity in the educational reform start with the relinking of the school to life and the restoring of the intimate relationship between them by enriching curriculum, using local wisdom.

Sandhya Gihar, Kudreti, B.R. and Saxena, M. K, (2004) in their article, “Environmental component in the Curriculum of Elementary education : An analytical study” mentioned that vast changes are taking place in the environment due to the interaction between human society an environment
itself. Man is exploiting the natural resource for its own interest and many such instances indicate awareness of natural resources and environment, which are reflected in our scriptures from the Vedas downward. Environment is not a separate entity or component of our lives but conservation. Environment is not a separate entity or component of our lives but concerns to all the aspects of our existence. The thing, which is important for all us, cannot be taken for granted. So there is a need to develop sensitivity among all the members of society towards their environment. But this sensitivity cannot be achieved overnight and neither can be a one-time exercise. It concludes that we have to begin with the very beginning. This means when the life i.e. when a new life opens its eyes.

Childhood period is key period for the formation of environmental learning attitude. In these early years, effective environmental education should begin by providing a knowledge base that is developmentally appropriate, occurs in real settings and involves children’s active participation (Cohen, 1994). A child acquires its very first knowledge and familiarity with this world through his parents. Child grows and comes in contact with books.

From above review, it is evident that it is our book, which can sensitize our child and make him eco friendly. In the present paper an attempt has been made to analyze the environmental components in Hindi text books prescribed by CBSE for class I to V.

3.5 RATIONALE OF THE STUDY:

Analyses of reviews from various researches show that environment education today is practiced despite the different emphases, world wide. The demand to establish environmental education programmes has been particularly pressing among developing nations due to the need to stimulated sense of commitment. The widespread use of environmental education strategies is becoming increasingly a common feature in developing nations and has extended itself to schools and beyond schools.
Due to the large number of environmental problems faced by developing nations, an increase in conservation education initiatives is urgently required, in order to prepare people both to understand and to face their own environmental problems:

Now it is necessary to enlighten the young generation to come and the people at large about the environmental awareness and their problems. In educational field at school level the environment education has a part and parcel of the system. At secondary level the central government has also put more emphasis on learning through environment, in which the students live. The curriculum for the same has already been prepared and being implemented too. The investigator endeavoured to take this arduous task to enhance the awareness of the teachers and students towards right curriculum on EE at secondary level. So that the fruits of the research may reach in the hands of the teachers and the taught.

The studies gave insight to the researcher, to pan his research work. It has also provided insight in deciding procedure prepare appropriate tool, selection of sample and data collection.