CHAPTER II

REVIEW OF RELATED LITERATURE
2.0 INTRODUCTION

The survey of related literature implies locating, studying and evaluating reports of relevant researches, study of published articles, going through related portions of encyclopedias and research abstracts, study of pertinent pages out of comprehensive books on the subject and going through related manuscripts, if any. For any worthwhile study in any field of knowledge the researcher needs an adequate familiarity with the work, which has already been done in the area of her/his choice. Researcher needs to acquire up-to-date information about what has been thought and done in the particular area. Researcher has to build upon the accumulated and recorded knowledge of the past. Researcher draws maximum benefit from the previous investigations, utilizes the previous findings, takes many hints from the designs and procedures of previous researches, matches her/his conclusions with the conclusions drawn earlier and tries to add from his side few drops to the ocean of knowledge.

W.R. Borg (1965) asserts, “The literature of any field forms the foundation upon which all future work will be built. If we fail to build this foundation of knowledge provided by the review of related literature, our work is likely to be shallow and naive and will often duplicate work that has already been done better by some one else.”

The present chapter has been organized under the following heads:

- The empirical research work carried out in the field of environmental awareness.
- Research studies carried out in India.
- Research studies carried out Abroad.
- The epilogue.
2.1.0 **EMPIRICAL RESEARCH WORK CARRIED OUT IN THE FIELD OF ENVIRONMENTAL AWARENESS**

Researcher tried to search all related literature from all possible sources to get acquainted with work done by previous researchers. Enormous investigations have been conducted in the field of Environmental Awareness in Indian and International context. Herein, the investigator has considered only those important studies, which have touched the spirit and sphere of present investigation to some extent. The chapter in hand endeavours to review studies conducted by earlier researchers to give insight into phenomena of environmental awareness, and to identify the factors influencing it.

2.1.1 **RESEARCH STUDIES CARRIED OUT IN INDIA**


**Objectives:**

1. To study the existing awareness towards the scientific and social environment in children.
2. To identify the available community resources, which can be gainfully utilized for teaching.

**Methodology:**

The study was conducted in three distinct phases. In the first phase, the M.P. state curriculum for class III and IV was redesigned to build scope for environmental approach of teaching. The second phase comprised the development of an Environmental Awareness Test. The third phase was the experimental phase, where the effect of implementing the redesigned curriculum was assessed on environmental awareness and achievement in science. The experiment in the third phase was conducted
on 197 students from two schools in Bhopal, 102 students belonging to
class IV and 95 to class III. Fifty seven students from class IV and 47 from
class III (two section each) were in the experimental group and the rest in
the control group. Mean, S.D. and ‘t’ test were applied for data analysis &
hypotheses verification.

Findings:

1. Only one of 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.

2. The difference between the experimental group and control group on a
traditional achievement test was not significant.

Environmental Awareness among Children of Rural and Urban
Schools and Non-Formal Education Centers.

Objectives:

1. To know the components of environment in which children from
Rural(R) and Urban (U) areas were lacking and the areas in which the
students from both the streams were well acquainted.

2. To compare the environmental awareness of school going children (F)
and children studying in non-formal education centers (NFR).

3. To suggest means for developing environment based curriculum for
universalization of elementary education.

Methodology:

The study was conducted on 115 students of standard IV, 20 from rural
schools, 35 from urban schools and 60 from non-formal education
centers. An Environmental Questionnaire developed by Rajput and his associates was administered on the sample. Differences in the performance of students of three groups were tested for significance by ‘t’-test. First and the last ten ranking questions for each of the groups were identified and compared.

Findings:

1. The difference between FR and FU on environmental awareness was significant and in favour of FR.

2. Difference between NFR and FU on environmental awareness was significant and in favour of NFR.

3. Difference between NFR and FR on environmental awareness was not significant.


Objectives:

1. 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 allied problems.

2. To help students develop skills necessary for solving environmental problems and taking preventive measures.

Methodology:

In the first phase, the curriculum was developed by studying and analysing the existing literature on curriculum development, the concept of lifelong education and environmental education. The study employed
pre-test; post-test; 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.

Findings:
1. There was a significant difference in the performance of the experimental group as compared with control group on knowledge scores and attitude scores.
2. The experimental group had gained more than the control group in environmental activity inventory indicating effectiveness of the curriculum.
3. As a result of instructions for using curriculum, students reflected clearer and more vivid images perceived in terms of their sensitivity towards the environment.
4. Unit-wise analysis of the performance of the students in the experimental group showed that they had gained in overall knowledge in environmental problems as a results of instructions for using the curriculum.


Objectives:
1. To determine the extent of awareness about the environment among different categories of students and teachers.
2. To find out the attitudes of different categories of teachers and students towards the environment.

3. To find out the differences between environmental attitude and environmental awareness of students and teachers.

**Methodology:**

The sample for the study comprised of 800 subjects (200 teachers and 600 students) selected by stratified cluster sampling from a total of 48 schools. Environmental Attitude scale and Environmental Awareness Test developed by the researcher were used to collect the data. The collected data were treated with Mean, S.D. and ‘t’ test.

**Findings:**

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

2. The trained teachers and untrained teachers did not differ in their attitudes towards environment.

3. Teachers had more awareness of the environment than students.

4. Trained and untrained teachers did not differ on environmental awareness.

5. Girls possessed significantly more awareness of the environment than boys.

6. Urban students possessed significantly more awareness of the environment than rural students.

7. Science students and non-science students differed significantly in their environmental awareness score in favour of science students.

Objectives:

1. To determine the difference in the level of awareness among different categories of students and teachers.
2. To determine the difference in attitude towards environmental education among different categories of students and teachers.

Methodology:

The sample for the study comprised of 1000 subjects (400 teachers and 600 students) randomly selected from 15 tahsils of Jaipur district. The study was conducted mainly through a survey and the application of the tools developed by the investigator to test attitudes and awareness of students & teachers. Collected data were treated with Mean, S.D. and ‘t’ test.

Findings:

1. Level of environmental awareness among students & teachers come out to be very good.
2. The urban and rural teachers differed significantly in their awareness of environment in favour of urban teachers.
3. The students and teachers of government schools possessed higher level of environmental awareness than students and teachers of private schools.
4. The male teachers had a higher level of environmental awareness than female teachers.


Objectives:

1. To study the impact of Environmental Education (EE) on primary
school children through Environmental Educational Test (EET).

2. To study whether the impact is influenced by factors like the area, medium of instruction, type of school and sex.

3. To find out whether there is any correlation between socio-economic status and environmental educational test performance.

Methodology:
The sample comprised 1451 students of standard V. The investigator selected randomly ten primary schools each from Madras, Coimbatore and Nilgiris. From each school 50 children were selected. The tools used included Environmental Education Test, Socio-Economic Status Scale by Vendals, a questionnaire and a set of activities framed by the investigator. The collected data were treated with descriptive statistics, correlation statistics and differential statistics.

Findings:

1. The distribution of the EET scores of the entire sample resembled the normal curve.

2. The children from schools of Madras had scored better as compared to children of Coimbatore and Nilgiris.

3. There was variation between the three area i.e. coastal, plains and mountains.

4. The relationship between SES and EET scores of the entire sample was significant.

Objectives:

1. To study the existing environmental awareness among the secondary school teachers.
2. To implement the prepared programme to enhance the environmental awareness of the secondary school teachers.

Methodology:

The study was conducted on 100 secondary schools teachers teaching standard IX. They were selected using random sampling technique. The tools used were the Environment Awareness Programmes (EAP) for secondary school teachers and Environmental Awareness Questionnaire translated and modified by the investigator and data sheet. The collected data were analysed using ANOVA.

Findings:

1. It was found that there was a significant effect of EAP as a whole treatment on Environmental Awareness (EA) of the teachers of experimental group.
2. There was no significant difference in the mean scores of environmental awareness of teachers possessing high and low experience of the teaching.
3. There was no significant interaction between independent factors of EAP and experience upon environmental awareness of teachers.


Objective:

To study awareness and attitude of selected groups towards environmental problems.
Methodology:

Using stratified random sampling method, 13 blocks and 6 tehsils of Jabalpur district were considered for the study. A total of 16 schools were selected with 1000 students and 240 teachers. The parents of the children were also considered in the sampling frame. The tools used include Attitude Scale, Awareness Scale, Achievement Test and an Interview schedule developed by the researcher. The collected data were treated using Mean, SD, ‘t’ test and correlations.

Findings:

1. The boys and girls differed significantly on their awareness towards environmental problems, in favour of boys.
2. The rural and urban students differed significantly on their environmental awareness, in favour of the urban students.


Objectives:

1. To develop a video-instructional package for creating environmental awareness among school going children.
2. To try-out the developed video-instructional package in creating environmental awareness among schools going children of Gujarat, Rajasthan and Uttar Pradesh.

Methodology:

The sample of the study comprised 180 Hindi medium students studying in classes VII & VIII, who were selected randomly from Surat, Churu and Bareilly. The tools used to collect the data included four criterion tests, an
opinionnaire and a rating scale developed by the investigator. The collected data were treated with Mean, SD and ‘t’ test.

Findings:

1. The study had resulted in the development of a video-instructional package for creating environmental awareness among school going children of Hindi medium schools.

2. The developed video-instructional package was found equally effective in teaching the students of classes VII and VIII of three states.

3. The majority of the students liked and enjoyed learning through video-instructional package. They found it knowledgeable, innovative, systematic and interesting.


Objectives:

1. To prepare and study the effect of the programmes for developing awareness towards environment among pupils of standard IV.

2. To develop environmental awareness among the pupils of standard IV.

3. To study the effect of types of schools on the environmental awareness of the pupils of standard IV.

Methodology:

The sample of the study comprised 160 students selected from Government Primary School and Private Primary School of Gandhinagar Gujarat using purposive (random) sampling method. The tools used to collect the data included Programmes Developing Environmental Awareness, Environmental Awareness Questionnaire developed by the
investigator apart from General Ability Tests of R.M. Patel and Bio-data sheet developed by the investigator. The collected data were treated with ANOVA.

Findings:

1. Pre-acquired initial environmental awareness played much more role in enhancement of environmental awareness of the pupils of standard IV.
2. The programmes developing environmental awareness was highly significant with reference to environmental awareness.
3. The students from the non-government schools had been affected more by the Programmes Developing Environmental Awareness.
4. Pupils from all the groups were more enthusiastic and zealous towards receiving the education through programmes rather than through the textbooks.


Objectives:

1. To delineate the environmental deterioration,
2. To prepare the list of possible improvable environmental deterioration,
3. To test out the provision for creating awareness in the existing syllabus, &
4. To develop learning materials to be suggested for curricular improvement.

Methodology:

The sample of the study comprised of 90 boys and girls from English
medium schools. They were equally divided into experimental and control group. Environmental studies book II of class III, IV & V were scrutinized. Questionnaire was developed to collect the data. Collected data were treated with percentages.

Findings:

In every aspect, the experimental group showed greater awareness compared to the controlled group. Though the textual matter studied by both the groups was the same due to the activities undertaken by the experimental group children, they showed considerable better awareness.


Objectives:

1. To analyze the content of text-books of primary classes prescribed by different boards of education-class-wise & subject-wise in relation to environmental concepts.
2. To study the opinion of teachers about the suitability of content (in relation to environmental awareness) of text-books prescribed by different boards of education for primary classes.
3. To assess the environmental awareness among the beginners of class VI.

Methodology:

The study was confined to 25 schools of Agra city, out of which 12 schools were of UP board, 08 of CBSE and 05 were of ICSE. The sample of the study consisted of 182 teachers and 855 students of class VI, from the selected 25 primary schools. For the critical evaluation of the text-books of class III, IV & V, all the major subjects i.e. Hindi, English, Social
studies & Science were taken into consideration. An Analysis Sheet, Opinionnaire and Environmental Awareness Test were developed by the researcher to collect the data. Collected data were treated with Percentage, Mean, S.D. and ‘t’ test.

**Findings:**

1. The content of textbooks of major subjects prescribed by different boards of school education for class III, IV & V was found suitable and sufficient to make children environmentally aware.

2. Teachers were not fully satisfied with the text-books to generate awareness about environment.

3. In the development of environmental awareness among children school pattern, school climate and sex play a significant role.

4. UP Board students were less aware towards environment than CBSE & ICSE board students.

5. Girls and boys differed significantly in their environmental awareness in favour of girls.

> **Prabha and Garg, Shilpi (2000). Environmental Awareness of Children through Spontaneous Drawing.**

**Objective:**

The present study attempted to study the environmental awareness of children as seen in their spontaneous drawings and to study the relationship to gender.

**Methodology:**

A sample of 16 children was selected randomly from 4 primary schools of Agra City. To study the minds of these 8-9 years olds, researcher analysed four drawings of each child.
Findings:
Results show that the environmental awareness has a direct relationship with the spontaneous drawings of these children, the children belonging to these age groups were quite aware of the environment in which they were living. When the girls and boys were compared, it was found that girls were sensitive and aware of the abiotic, biotic and religious, and educational environment, whereas boys were more aware of the scientific and technological environment.


Objectives:
2. To critically analyse how far these objectives are being fulfilled by the existing Geography curriculum at the secondary stage in different kinds of schools in Delhi.
3. To identify and develop relevant teaching strategies and skills for Geography.

Methodology:
A purposive sample of 25 teachers and 300 students of class X drawn from two Government Schools, two Kendriya Vidyalayas and two Public Schools. A questionnaire was employed to evaluate the Environmental Awareness of Geography teachers and students. The collected data were analysed qualitatively as well as quantitatively.
Findings:

Besides other, some relevant findings of present study were:

1. Environmental awareness of teachers and students of Public Schools was found to be greater than that of Government Schools and Kendriya Vidyalayas.

2. It was found that though the Geography teachers seem to have satisfactory awareness of various general environmental issues and values but they were not able to reflect it in their teaching as only fifty percent of students were having satisfactory awareness of these issues.


Objectives:

1. To assess the role of NGOs in sustainable development with special reference to environmental protection.

2. To study the impact of grass-root level of NGOs on the environmental awareness levels of the students.

3. To study the catalytic role of NGOs in bringing about pro-environmental attitude and behaviour among the housewives of residential colony.

Methodology:

The sample consisted of entire lower secondary grade students of classes VIII and IX of two schools, Grammar School and Public School situated in the suburban of Visakapatnam, to which the former was exposed to environmental education imparted by Green Vision, an NGO and 130 housewives were drawn from two residential colony, Balaji Nagar and
North Extention. The data were collected using survey analysis. The collected data were analyzed qualitatively.

Findings:

1. It was found that the students exposed to the environmental education scored high.
2. NGO had shown its ability to impart environmental consciousness among the younger generation.
3. It was found that higher standard of education and the awareness level were significantly related to each other as students of class IX found to be predominant in the higher awareness group and students of class VIII were equally distributed in high and low awareness categories.
4. Gender had no significant impact on environmental awareness categories and environmental awareness level of students.
5. Parents education and their occupation status also had no influence on the awareness level of students.


Objectives:

1. To assess the impact of education in creating environmental awareness among people.
2. To analysis the role of cultural practices for the conservation of environment.
3. To find out the environmental awareness among different categories of people.
4. To analyse the role of education for awareness of environmental hazards.
Methodology:

A sample comprised of 160 people selected through purposive sampling. A Self-made questionnaire was used for collection of data. The collected data were analysed using Chi-Square test.

Findings:

1. Respondents with higher level of education in the formal system possessed greater awareness towards the environment.
2. In the opinion of the respondents, the use of traditional objects like leaf plates and earthen utensils are greatly relevant to protect the environment.
3. Both male and female respondents were found to be equally aware of environmental issues.
4. Both rural and urban respondents showed non-significant difference in their concern for environment.


Objectives:

1. To study the effect of scholastic achievement on different components of environmental awareness namely, Air Pollution (EA₁), Water Pollution (EA₂), Health and Nutrition (EA₃), Forest and Agriculture (EA₄), Population Growth (EA₅) and Total Ecosystem (EA₆) and Environmental Awareness as a whole (EA).
2. To study the effect of scientific attitude on different components of environmental awareness namely Air Pollution (EA₁), Water Pollution (EA₂), Health and Nutrition (EA₃), Forest and...
Agriculture (EA₃), Population Growth (EA₄) and Total Ecosystem (EA₆) and Environmental Awareness as a whole (EA).

Methodology:

350 male and 367 female students of +2 stage randomly selected from four districts of Rajasthan state namely Kota, Bundi, Jhalawar and Baran constituted the sample of study. The tools used to collect the data included Environmental Awareness Test, Scientific Attitude Inventory and proforma for collecting examination scores from office records developed by the investigator. The collected data were treated with Mean, S.D. and 't' test.

Findings:

1. Scholastic Achievement had significant effect on Environmental Awareness on three dimensions viz EA₃, EA₄ and EA₅. In case of the rest of the three dimensions of EA viz, EA₁, EA₂ & EA₆ there was no significant effect of scholastic achievement.

2. Scientific attitude had significant effect on environmental awareness on three dimensions, viz EA₃, EA₄ and EA₆. In case of EA₁, EA₂ and EA₅ dimensions of environmental awareness scientific attitude had no significant effect.


Objectives:

1. To compare the environmental awareness of boys and girls students of central schools.

2. To compare the environmental awareness of science and arts students of central schools.

3. To compare the environmental awareness of students studying in
central schools and other schools having same syllabus.

4. To compare the environmental awareness of students studying in central schools and other schools having different syllabus.

Methodology:

The sample consisted of 600 students selected from 18 schools of six districts of Uttar Pradesh. Environmental Awareness Inventory (EAI) developed by researcher was used for the collection of the data. The collected data were analysed with Mean, S.D. and ‘t’ test.

Findings:

1. The difference between boys and girls students of central schools was found to be significant with respect to their environmental awareness in favour of male students.

2. There was significant difference between environmental awareness of science and arts students of central schools in favour of arts students.

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

4. There was no significant difference between environmental awareness of the students studying in central schools another schools having different syllabus.


Objectives:

1. To compare the students of high and low economic status on the basis of environmental awareness.

2. To compare the boys of high and low economic status on the basis of environmental awareness.
3. To compare the girls of high and low economic status on the basis of environmental awareness.

Methodology:
The sample of the present study consisted of 85 students of 9+ age group from class IV, selected randomly from two schools. Environmental Awareness Situation Test using Likert five-point scale constructed by the investigator was employed for data collection. The collected data were subjected to ‘t’ test.

Findings:

1. There was a significant difference in the environmental awareness of students of high and low economic status in favour of students having high economic status.
2. There was a significant difference in the environmental awareness of boys of high and low economic status in favour of boys having high economic status.
3. There was a significant difference in the environmental awareness of girls of high and low economic status in favour of girls having high economic status.

Goswami, Kavita & Pirta, R.S. (2001), Creating Environmental Conciousness : An Experimental Study.

Objective:
To apply a holistic approach in the area of environmental psychology to experimentally study its impact in creating environmental concerns.

Methodology:
In the present experiment a pre-test; post-test; design was used, 75 girls-16 to 20 years of age, studying at higher secondary level were
assigned to three treatment conditions- Experimental group-II received instructions for 9 days. Experimental group-I for 5 days and Control group for zero days. An objective measure of environmental concerns was developed which comprised of the components of awareness, behaviour and intention. The scores were analyzed using ANOVA and ANCOVA.

**Findings:**

1. The control group differed significantly from experimental group-I and experimental group-II under post-test condition for the total scores on environmental concerns.
2. The experimental group-I and experimental group-II did not differ significantly.
3. For experimental group-I and experimental group-II the intra group differences between the pre-test and post-test scores were significant for environmental concerns and its three components.
4. Under control group condition, pre-test and post-test scores were not significantly different for the three components as well as total scores on environmental concerns.


**Objectives:**

1. To study the levels of environmental awareness among the students.
2. To study the role of environmental factors on environmental awareness in the study region.
3. To know and highlight the problems of environmental awareness among the students.
4. To study the remedial aspects.
Methodology:

A sample consisted of 15 students of class VII from the three schools located in the urban, rural and tribal areas of Jalgaon district was considered for case study. Two types of questionnaires were used to measure environmental score in the regions and the environmental awareness scores. The awareness scores and environment scores charts were prepared and analyzed using average.

Findings:

1. In the Jalgaon district there were variations in environmental factors, which influenced the environment scores in the region.
2. Environment scores were lower in tribal and rural schools while it was higher in urban schools.
3. Environment scores directly reflected the environmental awareness within the study region.
4. Tribal area had low environment scores and also low awareness scores.
5. Rural areas had areas with medium environment scores with more than 50% environmental awareness.
6. Urban areas were having highest environment scores and also highest environmental awareness.

James, Jeena. (2003). Creating Environmental Awareness among Primary School Children through Field Trip.

Objectives:

1. To find whether there is a change in awareness about environmental pollution among primary school children through field trip.
2. To find whether there is any difference between boys and girls in
the change in awareness of environmental pollution.

3. To find whether there is any difference between Tamil and Malayalam medium children in the development of environmental awareness.

Methodology:

In the present study, pre-test, post-test single group design was followed. The sample of the study consisted of 24 children (11 girls and 13 boys) studying in V standard of which 11 from Tamil medium and 13 from Malayalam medium. After the selection of the sample, a pre-test was administered using the self-made questionnaire to measure the awareness of the children. After conducting the field trips to different places, the same questionnaire was used for the post-test.

Findings:

1. The first hand experiences through field trip and the innovative follow up works were found to be highly effective for the entire sample in creating awareness about the environmental pollution.

2. The impact of filed trip experiences in acquiring awareness of environmental problems was found to be same among boys and girls.

3. There was no significant difference among Tamil medium and Malayalam medium children in the development of environmental awareness.


Objectives:

1. To find out the adequacy of the content of high school biology
text-book for environmental awareness.

2. To develop activities for the above-a few prescribed in the text-books and few generated by the researcher.

Methodology:

To achieve the objectives of the study, the researcher proceeded in the following manner: First, the areas of environmental awareness were collected from a resource book. Second, the subject-content was analyzed to find if there were related concepts in the high school biology textbooks published by Government of Andhra Pradesh. Third, activities to instill these abilities through the above content was identified for some and developed for some by utilizing the same text-books, resource books and brain storming sessions. The high school biology text-books published by the Government of Andhra Pradesh were analyzed for environmental awareness components as identified by Tiwari Committee Report (1980).

Findings:

The content analysis indicated that class IX text-books had the maximum emphasis on environmental education, which was followed by class VIII, while it was least for class X. Then, the activities for the content were developed class-wise which were context-specific, cost-effective, child-friendly and environment-friendly. Children exposed to these and similar other curricular activities instilled appropriate behaviours.


Objective:

The objective of present study was to develop environmental awareness among student through English teaching.
Methodology:

The sample of study consisted of 80 students of VIII class randomly selected from two secondary schools of Lucknow city. In each school a group of 40 selected students were divided into two equivalent groups of 20 students i.e. experimental and control groups. To know the level of environmental awareness pre-test was conducted on all selected students, for this purpose a self-made questionnaire consisting of 30 questions was used. The experimental group was exposed to a specially designed program for creating environmental awareness among students through English teaching. Students of control group attended their regular classes as usual. Finally, post-test was administered on experimental and control groups both. Mean, S.D. and Critical Ratio were determined from the scores on environmental awareness obtained from the pre and post-tests of both the groups.

Findings:

1. There was a significant difference between the pre-test and post-test scores in environmental awareness of the experimental group.
2. There was no significant difference between the pre-test and post-test scores in environmental awareness of the control group.
3. There was a significant difference between the post-test scores of the experimental and control groups.


Objective:

To find out the effects of video intervention (Video films on
environmental educations) on the level of environmental consciousness of students studying in IX to XII classes in respect to their sex (male/female) and locality (rural/urban).

Methodology:

Using multi-stage stratified random sampling technique, 13 urban & 8 rural secondary schools were chosen from Bareilly district of Uttar Pradesh. Three hundred regular students studying in class IX to XII were selected from the sample schools. Consciousness about Pollution and Environment Protection Scale (CPEPS) standardized by Gihar, Kukreti and Shah was used to collect information regarding the environmental consciousness of the students. Beside above tool as video-intervention, a package of 12 video films covering 23 areas of environment component was also used. The collected data were treated with Mean, S.D. and ‘t’ test.

Findings:

1. A remarkable difference was found between pre-intervention and post-intervention mean scores of the male and female students. After getting intervention all male and female students scored significantly higher mean scores in post intervention test on overall environmental consciousness.

2. Rural and urban students had scored significantly higher post-intervention mean scores on overall environmental consciousness.


Objectives:

1. To study the level of environmental awareness among different educational classes.
2. To study the relationship between environmental awareness and educational standard/level.

**Methodology:**

The sample of the present study consisted of randomly selected 100 undergraduate girl students, 100 post-graduate girl students and 50 teachers. Self-developed Questionnaire of Awareness was used to find out the level of awareness. The collected data were treated with chi-square test.

**Findings:**

1. There was no significant difference in the level of environmental awareness among different educational classes.
2. Results of study indicated that some aspects of environment like meaning and conservation awareness were affected by education.

**2.3.2 RESEARCH STUDIES CARRIED OUT ABROAD**

**Hardy, C.A and Fox, N.D. (1976). Environmental Awareness in Rural, Suburban, and Urban settings.**

This study was conducted to ascertain whether or not there is a positive relationship between environmental attitudes and environmental knowledge. In addition, the question of how any relationship that might exist varies among student subgroups was addressed. The Environmental Knowledge and Attitude Inventory was administered to a random sample of 75 rural, 120 suburban, and 102 inner city X and XII graders.

1. There was a significant difference in attitude scores for the three subgroups.
2. A significant positive relationship between environmental attitude and knowledge was found for the suburban and inner city groups; however, the relationship was not significant for the rural group.

This thesis describes an applied pre-test; post-test control group design. The study was conducted at a predominantly lower income elementary school during a program which introduced children to principles of architectural design.

A theoretical model was extrapolated after making extended observations of reactions to the hands-on-community oriented curriculum. Because of the children’s excitement about this curriculum, improvements were expected in self-esteem, architectural knowledge, co-operative skills and values, environmental awareness, task commitment, appreciation of the creative process and general intellectual skills. One hundred twelve fourth and fifth grader participated in the experimental program. Two control groups comprised of 30 inschool children and 47 children from a nearby school were employed. The California Achievement Test, the SRA Mental Abilities Test, and five tests designed for the study were administered. Report cards, interviews, questionnaires, observations provided additional data.

Both fourth and fifth graders improved significantly in environmental awareness (p<0.02 and p<0.00 respectively), improvements were correlated with involvement, but there was no correlation between improvement and previous academic achievement.

In the remaining measures—task commitment, self-esteem, appreciation of creative process and general intellectual skills—there were no significant improvements. There were significant improvements in skills and values of co-operation & knowledge of architecture,

This study investigated the effectiveness of a music-based sensory training program in improving environmental awareness, activity participation level, reality orientation and attitude of 22 regressed geriatric patients. Subjects were randomly assigned to experimental (mean age 80.5 years) or control (mean age 83.3 years) groups and were assessed through measures including the Philadelphia Geriatric Center Mental Status Questionnaire at the beginning, middle, and end of the treatment program. Experimental subjects attended two; 30- minutes group sessions weekly for 16 weeks. Controls received no treatment. A mixed – effects ANOVA was conducted for each dependent variable.

1. In all four cases a significant interaction was found between groups and treatment conditions.

2. The control group remained the same across trials, while the experimental group showed marked improvement.


The researchers of this study state that our environmental consciousness determines the way we relate to our environment. This study inquired into the knowledge, comprehension, responsibility and interest of secondary school students and teachers about local conditions, natural processes and environmental issues and problems as a means of measuring their environmental consciousness. The study also identified independent variables that significantly affected dependent variables,
knowledge, comprehension, responsibility and interest.

1. The variables community selection and school interacted significantly to explain the variance in environmental knowledge, comprehension, responsibility and interest in the student's scores.

2. The teacher's knowledge, comprehension, responsibility and interest were significantly affected by community but not by school and subject taught.

3. The teachers were aware of many events in their environment but could not explain many of them.


This study examined ecological awareness among 88 preschool children, using 3 tasks i.e. picture discrimination, picture arrangement and picture comprehension tasks. Subjects were able to identify graphically depicted ecological issues with accuracy relative to the nature of the task and its level of difficulty they were comparably aware of ecological issues, more over no differences were found relative to subjects place of residence. There was an absence of gender differences in performance on the measures of ecological awareness.

Chin, Chi-Chin. (1993). A Study of Environmental Knowledge, Attitudes and Behaviour of Secondary Students and Pre and In-service Teachers in Taiwan.

The study investigated knowledge, attitudes, verbal commitment and actual commitment of secondary school students, and pre-and in-service teachers in relation to environmental issues in Taiwan. All groups were assessed for their awareness of current environmental problems in
both Taiwan and the world. Results indicated that:

1. Students in rural junior high schools appeared to have the lowest level of environmental attitudes, awareness of environmental problems and verbal commitments.

2. Older students outscored younger as expected.

3. Rural teachers possessed less environmental knowledge than urban teachers.

4. Girls tended to be more aware of environmental problems than boys.

5. In-service and pre-service teachers were no more aware of environmental problems than senior high school students, but in-service teachers expressed more commitment to the environment than all others.

King, & Lee Donna. (1994). *Doing their share to Save the Planet: Children and the Environmental Crisis.*

This work used qualitative methods to analyze children’s experience of “Saving the Planet”. Qualitative content analysis of 350 children’s drawings of environmental crisis, and ethnographic interviews with 100 children between the ages of five & thirteen in classrooms and summer camps in upstate New York and South Carolina.

Children’s awareness of environmental crisis was widespread and their experience of “Saving the Planet” was surprisingly unbeat. Children’s drawing reveal that across categories of race, class, school grade and gender, many feel personally empowered to help save the planet, However for those children who do not feel personally empowered, race/class and gender difference were apparent, with more girls and poor Black children’s drawing environmental problems with no apparent solutions.

This study was carried out to compare environmental awareness of German adolescents with Russian adolescents. 610 German and 610 Russian adolescents in age groups of 12, 15 and 18 yrs, completed questionnaires assessing their emotions about environmental destruction, willingness to engage in proenvironmental behaviours, relation to nature, and evaluation of adult environmental behaviours. Results show that:

1. In both groups, anxiety, sadness and anger about environmental destruction were high but hopelessness was rejected. Willingness to engage in proenvironmental behaviours was strong.

2. German students had stronger feelings and were more willing to engage in personal proenvironmental behaviour than were Russian but their level of environmental awareness decreased with age.

3. Female of both groups had higher levels of environmental awareness than did males.

4. Environmental feelings and behavioural tendencies were highly correlated.


This study assessed the environmental literacy of 292 urban middle school teachers using the Wisconsin Environmental Literacy Survey (WELS). The WELS measures environmental literacy through a Likert-type attitude survey, a self-reporting behaviour instrument, and a multiple-choice measure of cognitive learning outcomes or environmental knowledge. These scores were combined to drive a total environmental literacy score.
1. Difference in teachers environmental literacy were examined relative to gender, racial/ethnic background, number of pre-service environmental courses taken, number of in-service environmental courses taken, years of teaching experience, and subject area taught.

2. Significant difference in scores on various subscales were found among teachers according to social/ethnic background, subject area taught, and years of teaching experience.

3. Taking pre-service and in-service environmental courses appears to have a positive impact on environmental behaviour, environmental sensitivity, awareness and values, but not appear to have any impact environmental knowledge.

\[\text{MacEachren, E. J. (2002). Craftmaking: A Pedagogy for Environmental Awareness.}\]

This study explores craftmaking as a pedagogical approach to environmental awareness. The ideas of four prominent educators and their craft-based curriculum were interpreted and discussed. The ways a craft making pedagogy can address the concerns raised by environmental thought advocates and environmental educators in particular were emphasized.

The craftmaking pedagogy is then presented. Beginning with a brief overview of the significance of making items useful in human life, questions were raised concerning the way craftmaking experiences shape a person’s awareness of the natural locale. The craftmaking pedagogy is presented through a theoretically based map that involves guide posts which are each outlined through definitions, explanations, narrations and suggested teaching activities. This conceptual map is intended to aid craft-makers and educators to better identify the aspects of a curriculum that hold the most potential to shape a person’s perspective of the natural world.
Discussion of interview and analysis were included and associated with the craftmaking pedagogy. This study provides a conclusion emphasizing the significance of a return to craftmaking experiences in the general population’s educational experience for promoting environmental awareness.

2.2.0 THE EPILOGUE

Reviewing the related literature cited above, researcher made the following observations:

1. Most of the researches in this area were related to the effect of different innovative programmes on environmental awareness.

2. As far as factors affecting environmental awareness are concerned, environmental awareness has been studied in relation to Gender, Locality, System of schooling (Government/Private and Formal/Non Formal), Discipline (Science/Arts), SES, Board of Education, Level of Education, Parent’s Education & Occupation, Scholastic Achievement, Scientific Attitude and Subject taught, Training, Experience of teaching in case of teachers.

3. Most of the researchers used the tools developed by themselves to collect data regarding environmental awareness. This seems to be quite logical and necessary as there is a dearth of standardized tools in the area of environmental awareness.

4. ‘t’ test and qualitative analysis were mostly used to process the data, in some researches ANOVA, ANCOVA, Chi-square and Correlation techniques were also used.

5. Studies dealing with environmental awareness of girls were very few in number.
The review of related researches does not indicate the existence of even a single study in Indian condition in which as much as five variables are studied together to know the contribution of these variables in environmental awareness. The present study departs from the previous studies in the field of Environmental Awareness in the following ways:

1. The present study covers a comparatively large number of variables on the basis of which some definite conclusions can be drawn.

2. It attempts to ferret out the contribution of the independent variables in determining environmental awareness.

3. The regression equation has been developed to predict the environmental awareness on the basis of independent variables.

4. The study is exclusively based on adolescent girls, which has rarely been studied in previous researches.

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