Chapter 3

REVIEW OF RELATED LITERATURE

• 3.1 Studies Related to Environmental Education

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CHAPTER 3

REVIEW OF RELATED LITERATURE

This chapter analyses the review of related literature pertaining to this study. Review of related literature is vital for any research. It creates an insight in the researcher. It enables him to learn more about the grounds on which the study has to be built upon. It reveals the advantages and limitations of the issues taken and directs the researcher to frame a suitable technique to carry out the study successfully.

Related literature has different dimensions and each dimension is a nuance to learn from. Proper comprehension of the facts presented in the study may lead to further worthwhile empirical researches.

The findings, conclusions and recommendations of the studies reviewed created an insight in the researcher to develop the study in different perspective. The studies reviewed by the Investigator related to the topic under study are classified in to following heads.

A. Studies related to Environmental education

B. Studies related to Environmental Education through various Electronic Media.
C. Studies related to various Electronic Media Based Instructional Strategies.

D. Studies related to Environmental Ethics

3.1 Studies related to Environmental education

Meerah (2011) found that students who were exposed to the curriculum and Extra-Curriculum environmental intervention module significantly improved their environmental skills.

Sulaiman (2010) conducted survey on secondary School students’ Environmental Awareness. The findings revealed that level of environmental awareness in female students were higher than the male students, science stream students were higher than the arts stream students, and the urban school students were higher than suburban school students.

Nisanci (2010) conducted research on the effects of instruction methods in the new Biology curriculum on ninth grade students’ environmental awareness. The findings showed that the instruction methods used in the new Biology curriculum were more effective in enhancing the ninth grade students’ environmental awareness than the traditional methods did.

Koksal (2010) investigated the students’ knowledge on ecology. The results revealed that there had no differences were found within grade levels. The male students were significantly higher than the females in knowledge on ecology.
The study conducted by Claudio (2008) on “can global warming heat up environmental education?” revealed that students who are indirect contact between themselves noted the issues of climate change and how it affected their future lives.

Taj (2005) developed a tool to measure the environmental ethics of Secondary School Students.

Kumar (2000) observed that there is now an acceptance of the idea of the oneness of survival of animal and plant life. The hoary tradition of our country in conservation continues every today and we have the inspiring example of the bishnoi community in Rajasthan, Haryana and Uttar Pradesh, dedicated to protecting our tree and wild animals.

Jenifer (1996) has emphasized environmental studies as an interdisciplinary subject which includes socio-economic, political, natural, biological, anthropological, economic, aesthetic and cultural aspects of human life. Hence it indents to control and design environmental problems according to human necessities. It is often remarked that environmental topics should be a subject of study in the school.

Jenifer (1996) evaluated the environmental science curriculum and its effects on Secondary School students’ environmental knowledge and attitude. The results showed that environmental knowledge and attitude were developed as a result of the curriculum.
Simpson (1995) studied the purpose of (i) increasing students’ awareness of nature and environmental issues, (ii) providing an interdisciplinary curriculum for environmental issues. The results showed that environmental awareness were increased by the application of interdisciplinary curriculum.

Wilson (1994) created a positive attitude and values about the word of nature and sense of responsibility towards the natural development through environmental education at the early childhood level.

Francis (1993) proposed an alternative model for environmental education in natural resources emphasizing a complete system approach, which helps the pupils to evaluate and understands natural resource based on underlying ecological principles. Attempts to accounts for integrating factors in the natural resources system with serving as the fountain resources.

A study by Yogamoorthi (1992) stressed the need for environmentally trained teachers for environmental education. He concluded that Environmental education must include in the training programme.

Gopalakrishnan (1992) exposed a group of Primary School students to environmental education and evaluated with an environmental education test (EET). The result found a very good impact of environmental education in students.

Nat (1990) tried to develop an awareness of and responsibility for the environment at present and in future. He concluded that this could be achieved by bringing environment to school as well as school to environment.
Shahnawaj (1990) worked on the environmental awareness and attitudes (Towards environmental issues) of secondary and higher secondary schools teachers and students at Udaipur. He found that a very high level of awareness on the part of teachers and students regarding the environment oriented curriculum.

Rane (1989) evaluated the environmental study approaches of Parisar Asha in municipal school in Greater Bombay. His study was on environmental Study Approach (ESA) in the case of students of class I and II and he found the environmental Study Approach functioning satisfactorily.

Guptha (1986) found that teachers showed a favorable attitude towards the environmental education. The teachers pointed out constraints like crowded class rooms, lack of time for proper planning of activities, loss of interest in the absence of regular follow up action etc. on implementation of environmental education programme.

Disinger (1985) identified that the necessity of environmental education was used in Paris in 1948 , at a meeting of International Union for Conservation of nature and Natural Recourses.

Malhothra (1985) identified that the necessity of education was voiced by the IUCN way back in the sixties and reiterated over the years in many conferences.

Sytnik (1985) examined that “Environmental Educational concept which considers environment as a scientific and aesthetic resources”.
Environmental Education should inculcate in individuals a scene of responsibility for the improvement of the environmental quality for the benefit of all humanity.

Sreedevi (1985) conducted a study on student’s awareness of productivity oriented aspects with reference to the concept learnt in high school biology. It was suggested that the curriculum should be arranged as to make Biology education interesting and meaningful.

Deopuria (1984) conducted a study to compare the environment awareness and attitude of students when they are taught by the traditional method and environmental approach. It is found out through the study those students who have gone through the environmental approach showed considerable improvement towards environmental awareness than those who studied through traditional method.

Scaria (1984) conducted a study to identify the extend of awareness among the secondary school students regarding plants of food value in general and their uses and also to analyse curricular potentials of selected local plants of food value etc. the findings revealed that majority of students are lacking practical utilization of knowledge about the commonly available local food plants.

Madhyastha (1982) has discovered the use of environment both as a means and end of the education. Environment can be used for development of basic skills, study skills, and social skills, (health, personal hygiene, cleanliness of surroundings and conservation of judicious use of environmental resources for
teaching science). From analysis it is seen that teachers and students show their unawareness about many of these resources which may be due to the ignorance of about the use or presence of these materials.

Saxena (1981) have developed and standardized an environmental awareness test for children of grades 3, 4 and 5. The test included the physical environment into different categories- universe, air, water, rocks, soil, housing and clothing, plants and animals and abstract concepts.

Guptha (1981) conducted a study recommending the awareness of environment among rural and urban schools and non formal education centers. It was found that school going rural children did better than urban sample. In addition, non formal centre students were more aware than the urban students.

The SCERT of Andhra Pradesh (1980) found that curriculum relevant to environment was more effective according to the teachers and headmasters, the environmental oriented science curriculum fulfilled the educational objectives as prescribed by the Directorate of Education.

Mitryuskin et al. (1980) have outlined environment education at two levels: (1) education at educational establishments and (2) education outside the establishments. The first starts from Kindergarten, Primary, Secondary, Vocational and technical school and goes on to higher education bodies and the second is in the family, on camp holidays on picnics, in cultural gatherings, public activities, propaganda and information system, political organization, scientific societies, press, radio TV, cinema etc.
3.2 Studies related to Environmental Education through Various Electronic Media.

Ercag (2009) found that with the help of mobile technologies, data services, and multimedia messaging systems increases student’s environmental awareness.

Meenu (2006) conducted a survey of the facilities of educational television programme at Primary School level. The findings showed that the ETV lessons in Environmental science and mathematics taught to students of both class III and V significantly improved their learning achievement as compared to their counterparts taught through traditional method.

In his study, Madanakmar (1998) found that media based instructional strategy is more effective in creating environmental theory and application awareness than conventional text book approach among primary school pupils of kerala.

Singh (1999) conducted a study indicates that teacher made video-instructional packages can be used effectively for creating awareness and providing information to school students. Therefore, such more attempts should be taken for some other important aspects of life as per the needs of the students. It could be used as an instructional system in both formal as well as in non– formal situation.

Kaswasker (1996) studied the construction and effectiveness of multimedia package to develop population awareness. It is found that Multimedia
package was more effective in changing the attitude of different aspects of population awareness.

Idayavani (1991) developed two video programme, one on weathering and other on rivers, he found that students who were exposed to the video method performed better than students taught by the traditional lecture method.

Kalimuthu (1991) developed a video programme on Environmental pollution. He found that group receiving instruction through video programme learned more concepts as compared to the student which learned through conventional method.

Ravindranath and Nair (1990) found that computer Assisted Instruction (CAI) was very effective in teaching of environmental awareness, the availability of sophisticated gadgets like computer, class room instruction could be made more creative and challenging.

Usha (1990) found that students got higher scores who studied alone with the help of self instructional film strip of topic “Nutrition”. The objectives knowledge, understanding application and skill ,the gain score was found to be significant.

Antonysamy (1989) found that learning through viewing of the video films was more effective than learning through charts with reference to learning environmental concepts.
3.3 Studies related to various Electronic Media Based Instructional Strategies

Ping (2011) conducted on the use of video lesson modules in a teaching methodology course to prepare pre-service teachers for supporting the English-language development of pupils at K-8 schools. It is found that high reliability exists in the application of these materials.

Chang (2011) studied the impact of different teaching strategies on the learning performance of environmental education. Students learned about resource recycling and classification through an instructional website based on the teaching tool of Web Quest. The result showed that using Web Quest in outdoor instruction influences students’ learning performance positively.

Iman (2010) studied the effect of using video lesson analysis methodology (VLAM) in mathematics teaching. It was found that the VLAM Improved the ability to analyze mathematics teaching.

Moijdeh (2010) found that Video lesson based learning increases the language ability in kindergarten students.

Aristides (2010) concluded that Video lessons are developed learners' perceptions of their own English language learning processes. In the focus group interviews, students provided detailed descriptions of the effects of different aspects of the video on their language learning both in responses to the material as well as their ability to concentrate on and assimilate the new knowledge.
Giulia (2010) investigated the impact of an observation framework on pre-service teachers' abilities to engage in productive video-based reflections on mathematics teaching. The Findings suggested that the Lesson Analysis Framework facilitates pre-service teachers' learning to elaborate on what they observe and to propose alternative teaching strategies.

Manuel (2010) studied the use of interactive whiteboards (IWBs) in primary schools. The result found that teachers ask students--through the use of language and gestures--to show in sequence their understanding of the use of multimodal objects according to the goals set for the lesson and the knowledge privileged by an academic discipline.

Othman (2010) conducted a study on the effect of using video lesson analysis methodology (VLAM) on the ability of prospective high school mathematics teachers to analyze mathematics teaching. It was found that the intervention remarkably improved the ability to analyze mathematics teaching of the experimental group.

Yuremezoglu (2010) investigated the effectiveness of video tape and demonstration experiments in secondary school students. The result showed no significant difference in the effectiveness of the video tape over the demonstration.

Chen (2007) studied the integration of Internet tools in language learning activities. It is found that the students with an opportunity to experience new
technologies; learners experienced the pleasure of learning and thus increased their learning possibilities.

A study conducted by Donnelly (2007) indicates that innovation within teaching and learning suggest E-learning, and as a result it is important to consider what influence staff engagement and participation in E-learning.

The result of the study conducted by Moni (2007) indicates the successful integration of E-learning into large class of Human Biology, the engagement of first year students through collaborative learning and the fostering of learning through challenging assessment relevant to the core practices of professional Scientists.

Natesan (2004) studied the effectiveness of teaching concepts in mathematics through video cassettes. The finding showed that an increased level of academic achievement of experimental group was due to the teaching of mathematics concepts through video cassette.

Guile (2002) in his study describes how electronic resources can support learning in small medium – sized enterprises by identify connections among management strategy, technology development and knowledge creation.

Sarangi (2000) found that the learning through ETV programmes was influence positively by their language ability at Secondary level. The study also reveals the educational Tele-production and to make TV a more potential institutional medium.
Ilangovan (1998) studied on the effectiveness of audio – video interaction in developing listening comprehension in English. He compared the effectiveness of conventional teaching method (CTM) with media based non – interactive group teaching (MNGT) and AV presentation as support system (AVPSS). It was found that MNGT was more effective in comparison to CTM. AVPSS was more effective in enhancing retention of listening comprehension.

Agarwal and mohanthy (1998) undertook a meta study to see the effectiveness of Multimedia (MM), Programmed Learning Method (PLM) and Traditional Method (TM), and found that students performance taught by MM and PLM were significantly higher than those taught by TM. Further, it was found that PLM and MM were more effective for secondary level than primary level and that PLM and MM were later suited to teach science subjects than arts subjects.

Neera (1998) compared the effectiveness of video teaching learning materials (VTLM), video aided instruction (VAI) and conventional teaching. He found that student most favorably disposed towards VTLM.

Marthanda (1998) found that instructional media the package in video lessons was effective as compare with the lecture method in modifying cognitive and affective behaviour in prevention of AIDS.

Ayres and Melear (1998) found that there is an increased learning of physical Science concepts via multimedia when compared to the traditional hands- on exhibits in a science museum.
Emerson and Mosteller (1998) concluded that computer technology can support good teaching and can provide active participation. Also found that multimedia has advantages using multiple sense and can accommodate varying needs of students and enhance learning efficiency.

Yasmin et al. (1998) designed a project on collaborative educational multimedia and the findings indicated that students improved significantly in their Science understanding programming skills.

Das (1998) found computer assisted learning material is more effective to learn Rhymes in different modes. The study reveals Composite mode of presentation may not ensure higher cognitive language learning

Thatte (1998) studied the relative effectiveness of Programmed Learning and through Audio Visual Aids at Upper Primary level. The result showed that Computer software package was more effective in terms of academic achievement of the students.

Mehryar (1998) conducted a survey on the effectiveness of a web based interactive multimedia system in tertiary education. The results of the survey conducted during the course indicated that students were enthusiastic towards the new multimedia packages.

Reddy and Lokanatha (1997) found out the effectiveness of multimedia instructional strategy in teaching science to slow learners the results reveals that the multimedia instructional strategy is more effective than the traditional lecture
method in teaching science and it enabled the slow learners to cope with normal students to a considerable extent.

Surwase and Chincholkar (1997) studied the use of educational technology in teaching of geography to class V students. They found that generally audio visuals were not available in schools. They also found that geography teachers were not trained in using audio-visual aids. During the study, researchers found that teachers agreed to the point that difficult concepts can be taught easily by using teaching aids.

Enigo (1997) found that instructor controlled interactive video was more effective than lecture method and conventional non - interactive video at secondary level.

Bhangoo and Sidhu (1997) studied the impact of selected audio – visual aids on food hygiene knowledge of secondary school students. They found that students taught with audio-visual materials performed better than controlled group.

Adamson (1997) found that student gender did not have a significant effect on either interactions or attitude in multimedia instruction and students in mostly female groups in their performance for small group learning.

Cavender and Rutter (1997) describe some of the multimedia technique that addresses the difficulties in teaching both large introductory and small advanced level classes in the life science.
Robin (1996) found that video game promote the hard puzzles solving capacity in third grade students than ordinary students.

Rocca (1996) reveals that step-by-step instructions for creating and reproducing slides from video materials allows for creativity, can easily be taught to students and incorporated into their presentations.

Chandra and Pandya (1996) studied the effect of video films for imparting legal education and found that students of science shown achieved higher than students from the art stream. Similarly, those students who had studied in English medium school did better than who had studied in vernacular school.

Callaway (1996) identified that the effectiveness of an interactive multimedia computer package designed to accommodate a number of cognitive and learning style is much higher for learning difficult topic such as ‘photosynthesis’ for high school students than the typical class room method.

Study conducted by Edmondson (1996) showed that computer assisted instruction students performed significantly better in their achievement of intermediate English.

Hardy and Jost (1996) found that the inclusion of music can stimulate and operate in the mental processing of computer supported instructional messages in the ninth grade lessons on Physical Science topics.

Steyn and Rohm (1996) established the learning outcome of the computer-aided lessons for first years analytical chemistry by comparing the results of
students obtained for an assignment. Although results of the students who did the course were significantly better at 80% confident level, they responded positively and wanted more exposure to computer.

The Maryland Education Commission (1995) investigated the effectiveness of electronically mediated instructions for distance education, including interactive video, computer aided instruction, and audio-only instructions. Interactively was found to be an important factor in student achievement, whether in the classroom or through video and audio instruction.

Shigeru (1995) found that the integrated media approach triggered the learning capacity of students with mild disabilities.

Sahoo and Mallik (1995) in their study found out attitude of lower primary and upper primary school children’s on ETV programmes. They found no difference, however acquisition with ETV made them favourably disposed towards ETV-sex wise students also differed.

Sing (1995) developed study materials relating to video instructional package for teaching environmental awareness. It was field tested and in used in three schools in Gujarat, U.P, and Rajasthan, and was formed to be very effective and interesting. The study also reported that students enjoyed working through video package.

Kothari and Chowdhari (1995) studied the impact of Television programmes on behavior of students of different levels, and they found that girls
had more positive effect on their emotional and creative behaviour than boys. As regard the impact of Television programmes on moral behaviour, negative effect was more than the positive one.

Stevens and Lewis (1995) found that the overall response of undergraduate students using multimedia computer packages were favourable. The study concluded that multimedia computer technology presents a powerful aid in teaching and assessment of Biological Science.

Aldamash (1995) compared the influence of animated visuals with static visuals with upon college student’s understanding of organic reaction mechanism in chemistry. The result indicated that students using animated visual aids did significantly better than control group with respect to knowledge of organic reaction mechanism.

Studies of Hathi (1994) and Kaman (1998) were based on survey work relating to study of AV aids in the Secondary school of the Gujarat state and E.T. inputs to B.Ed programmes in Tamil Nadu respectively.

Balakrishnan (1994) conducted a study on the effectiveness on the pre recorded audio cassette as a supplementary device in teaching English pronunciation the school children. A package based on V Std. English text was developed to improve the pronunciation of English sound among pupils. It is concluded that pre recorded audio cassettes as a supplementary device is a good as specially trained teacher in improving the pronunciation of English sound among V Std. pupils. It also concluded that serious pronunciation difficulty might
have arisen due to unfamiliarity of sounds, which are not in the mother tongue of the learner.

Loretta (1994) found that computer Assisted Instruction (CAI) and lecture format provides better opportunity for immediate recall, although no single method ensured long term recall.

Hathi (1994) observed that Government Schools used AV aids much less than non Government private schools. The use of AV aids was found to be limited to models, charts, maps, posters, globe and microscope. Science teachers used AV aids much more than language teacher.

Parhar (1994) conducted a study on the effect of media on student learning. It was found that out of twenty schools surveyed only four were using school TV programme fully. Video and audio cassette players were not used. No teacher was found to be trained in the use of school TV programme.

Purushothaman and Stella (1994) studied the effectiveness of teacher control interactive video for group instruction, and found that it yielded better academic achievement as compared to the traditional method. The teacher present with video lesson made the most desired impact. The research study concludes that teacher’s component should not be eliminated.

Arbour (1994) developed a multimedia package that includes video cassette, a guide, six posters to provide a teaching out lines on Great Lakes
Fisheries for middle and high school. The package was found effective in both formal and non-formal school settings.

Don (1992) found that the use of educational media has a positive effect on teachers and students alike. He states that educational media may stimulate teacher’s creativity and inspire continued growth in the effectiveness of teachers as professional educators. Educational media also affect student learning, both facilitating learning performance and increasing student’s motivation to learn.

Katz and Pyryt (1992) describe a project that focuses on improving students self-image, self-motivation, and decision-making skills, by using technology like audio cassette, microphone, video animation, and computer package, for sixth grade students.

Sinnathambi (1991) developed a video programme on energetic in chemistry for Higher Secondary students and found that the experimental group learnt more concepts and gained more on the achievement test in energetic.

Narayana swamy (1991) prepared video programme for sixth grade students to teach Tamil vocabulary. He found that the experimental group learnt more Tamil words using the programmes than the control group.

Arularam (1990) evaluated the UGC programme properly known as country-wide classroom Education TV Programmes. The study revealed that most of the programmes cater to urban audiences. The needs of the rural students still remain unfulfilled. The study also revealed that programme in humanities was poor in offering knowledge enrichment.
Joseph (1988) found that tape slide programme can improve the theoretical awareness and productivity oriented mind in economic students at pre degree level.

Becker’s (1986) analysis of large scale of studies of computer use in the United States describes plans to make much more use of computers in the area of word processing, mathematics, and English language training. He reported that American School consider their most serious problems with computers to be that teacher’s knowledge of computer is too difficult to fit in to the existing curriculum and classroom activities.

Sethu and Indu (1985) found that through educational television programme, increases the language development in children, higher acquisition of information, scholastic achievement of students occur. In short, the educational television programme increase the learning effectively.

Greenberg (1984) investigated the effectiveness of a multimedia functional reading module. Use of the video cassettes lessons with computer practice was compared to videocassette use with paper and pencil practice. The findings revealed that no significant difference existed between the post test performances of the two groups.

The investigation by Kathy and Bruce (1983) revealed that the television scheme played a dominant role in organizing the content in to a meaningful whole. But they say that the viewing experience become more active process.
Golani (1982) found that non-availability of trained personals in audio visual education, problem of equipment’s, experience of production material, lack of guidance and assistant are some reasons for decline the technology based instruction. He stated that the use of audio visual material will be increased if teachers are allowed some additional free period for the location, and preparation of the requisite material, because the teachers have no perform, many other duties, in addition to teaching.

Bharadwaj (1981) analysed the position of audio – visual aids with respect to the availability and use of teaching aids along with difficulties encountered in the availability of appropriate aids and their use in respect of existing facilities of trained person as well as the administrative difficulties encountered in procuring them.

Sha (1981) concludes that maximum use of audio visual aids in classroom teaching improve the creative thinking among the students.

### 3.4 Studies related to Environmental Ethics

Reyes (2010) concluded that environmental ethics lessons and programmes for daily life should be included in Social and Educational process to overcome the dangerous issues related to the environment in future.

Oztuna (2009) conducted a study on the approaches regarding environmental ethics in different pre service teachers studying in Pre primary school Education, Elementary School Education and Science education. The
result revealed that there is no significant differences were found between and among the three teacher education programmes. The Pre primary education teachers participated an environmental course have higher level of eco concentric concern.

Prayoon (2008) concluded that environmental education teaching process using ethics infusion can develop Environmental knowledge and Environmental Ethics in Students.

Mario (2006) suggested that modern society will find no solution to the ecological problem unless it takes a serious look at life style; an education in ecological responsibility becomes essential to change the thought and behavior.

Ling (2006) found that experimental – narrative method is more effective than story telling method in environmental education and ethics learning. The study also revealed that students life style changed as eco-friendly as the result of the study.

Little flower (2006) studied on environmental awareness and environmental ethics of higher secondary students. The results showed that students from rural area possess more environmental awareness and environmental ethics than urban students.

Sundra selvan (2005) found that Environmental ethics level is higher in the students from rural than urban region. He also concluded that the girl students possess high environmental ethics level.
Khadija (2004) concluded that Islam shares similar fundamental principles to those underpinning “eco centric” perspectives emerging in the west. The conceptual teaching technique from west can help to develop Environmental ethics in Islam.

Michael (1984) conducted an environmental education programme which focuses on nature in Indian myths. By storytelling, free association, play acting involving the members of audience, dancing and sharing of artifacts the participants developed a good knowledge about environmental ethics.

**Conclusion**

The review of related literature helped a lot in developing a wider perspective of the variables selected for the study. The Investigator searched different types of studies and reports related to the topic.

Studies conducted by Mitruskin (1980), Saxena (1981), Sreedevi (1985), Scaria (1984), Guptha (1986) and Gopalakrishnan (1992) point out the following facts related to environmental education

- A wide need of environmental awareness in students
- Need of environmental based curriculum
- Need of practical knowledge to face Environmental problems/ issues.
- Need of Implementation of Environmental programme in Schools.
The studies of Michael (1984), Mario (2006), and Oztuna (2009) pointed out that Environmental ethics is not widely explored in human population. So an urgent needs to develop environmental ethics in students and in elders to reduce Environmental problems faced by living beings of today and tomorrow.

The review of literature related to media based instructional studies conducted by Antonysamy (1989), Idayavani (1991), Sinnathambi (1997), madanakumar (1998), Singh (1999) and Chen (2007) revealed that Electronic Media based Instruction is a good strategy to transfer wide knowledge to a group. But the review of the various research studies revealed that very few studies with direct involvement of electronic media is use for strengthening the Environmental Awareness and Environmental Ethics in class room situation. Still conclusively it is realized that Electronic media can bring everlasting and enduring changes in the minds of pupils.