

Review of Related Literature:

Every researcher must have knowledge of sources available in the field. There are three forms of such literature.

- (i) Direct sources which includes thesis, periodicals, journals, books, etc.
- (ii) Indirect sources as encyclopedia, indexes, abstracts, etc.
- (iii) Electronic sources through internet.

Every researcher must equip themselves with such type of knowledge for worthwhile study in the field of research.

Every researcher must know where and how to find out, because in absence of up-to-date information, his/her research work cannot be worthwhile.

Good, Barr and Seats analyze the purposes of study of related literature as:

- (i) To show whether the evidence clearly available solves the problem adequately without further investigation, and thus to avoid risk of duplication.
- (ii) To provide ideas, theories, explanations or hypothesis, valuable in formulating the research problem.
- (iii) To suggest method of research appropriate to the research problem.
- (iv) To locate comparative data useful in interpretation of results and
- (v) To contribute to the general scholarship of the investigator or researcher.

The researcher knowing the importance of the related literature has surveyed all the three sources of related literature. Some of them are reported with reference to the topic of research.

The researcher has reviewed the following journals, books, and periodicals and other literature /articles for her research.

When researcher found this research she get information totally related with her research. In India there are also environmental problems. so environmental education is very important for India. The findings of this study can be summarized as;

Coyle Kevin (2005) from this research I got following point which is helpful to my research.

1. The research shows that most Americans believe they know more about the Environment than they actually do.
2. The public needs true education on the environment.
3. We need to improve the quality and delivery of lifelong education on the environment to grasp its original promise and make it work.

4. We need to build more support for resource stewardship through education and use an informed public to mitigate some of the adverse effects of our actions on the environment.
5. This research finds that overall awareness of simple environmental topics is reasonably high nationwide.
6. This research finds a very strong nationwide belief in the value of EE.
7. Children get more environmental information from the media than from any source.
8. After 35 years of effort the environment has yet to achieve “core subject” status in the schools.
9. As the EE field has pursued education acceptance and mainstream positioning, it has developed and institutionalized well throughout educational approaches and gathered considerable evidence of academic efficacy.

Parlo Amy T, Butter Malolmb (2007) In this research explain about the topic of EE as follows

1. There is much room for expansion of EE in the science curriculum.
2. One impediment to the infusion of EE into science curriculum may stem from the dearth of EE in teacher preparation programs.
3. Multiple studies indicate a positive correlation between EE and student achievements.
4. The teachers perceived in teaching EE in a traditional school setting.
5. Several teachers felt that although the program was informative both in content and pedagogy, the information was limited in value because they did not reach on the coast
6. Several of the teachers noted difficulties in trying to teach outside the classroom.
7. The research provides a more in depth investigation into the obstacles of teacher integration of environmental topics as well as identifying other impacts of the program on classroom practices.

Gough Noel (2004), have in their research analyzed EE producing truth or reducing ignorance. The findings are as follows:

1. Ignorance can be useful point of departure for making sense of EE.
2. The reduction of ignorance with more conventional understanding research as the pursuit of truthful propositions.
3. Ignorance is a useful criterion for evaluating research because it focuses our attention on users.
4. Areas of ignorance to which useful EE research might be directed.
5. On significant life experiences in EE as studies which aim to identify formative influences in the lives of adults committed to environmental quality.

Hoody Linda (1995) In his research study makes on the educational efficacy of EE. He summarized the findings as follows.

1. There are several possible explanations for a lack of research that reinforces the pedagogical strengths of EE Among the possible reasons are: lack of funding or planning for program evaluation, difficulties incorporating assessments of problem solving and critical thinking skills into traditional school structures lack of relevant case examples of interdisciplinary model programs and most EE researchers are evaluating program outcomes relied to environmental attitudes and behaviors rather than assessing general educational impacts of EE .
2. A measurement of student learning within interdisciplinary EE curriculum presents complications for traditional educators even with the recent movement toward authentic assessment it is difficult to evaluate students abilities to investigate, evaluate, make decision or demonstrate environmental action through standardized testing.
3. A Another reason it is difficult to find studies analyzing the use of cross disciplinary EE content and methods may be that the educational structures in which they would successfully be integrated are vitality nonexistent . Until the educational systems are restructured to incorporate learning modeled by EE methods.

Vasquez Jo Anne (2008) Designing and delivering effective science instruction takes a coherent aligned curriculum designed around the big ideas of science which are helpful for environmental education.

1. To be an effective teacher of science cteachers first need to have a passion for science and then develop the skills for effective teaching a balance between knowing what to tach and how to teach.

2. A carefully designed curriculum is a road map to promote learning with understanding a usually is framed around a series of lesson and unit structure.
3. Factual knowledge may evolve and change, concepts remain universal and timeless.
4. Students refine and enhance their thinking about concepts over the course of their experience (e.g. motion, ecosystems, weathering)
5. Cross cutting processes and understandings to inquiry and technological design the nature and history of science and personal and social perspectives of science and technology.
6. Effective teachers of science will understand the topics of their grade level. Those who are not effective are looking at the teaching of science as simply teaching ponds, butterflies, dinosaurs which are themes of the stories of science.
7. Effective teacher of science will understand the students to develop, proactive and apply the big ideas and skills to get at the necessary content.
8. Curriculum topic study provides avenues and reading references to help teachers to identify relevant grade level content and increase their knowledge of the nature.

Sarewitz Daniel (2004) Science can play on effective role in resolving environmental problem. The review states the following

1. Scientific knowledge is not independent of political context but is coproduced by of scientists and the society within which they are embedded.
2. This research adds up to deeply textured portrayal of the troubled relationship between science and decision making in realm of the environment.
3. A number of examples from a right wing perspective, of how science had been manipulated, distorted, or suppressed mostly in support of liberal causes, mostly related in support of liberal causes, mostly related to the environment.
4. Ways that we have organized human action related to the environment.
5. An alliance of environmentalists and biologists opposed the experiment because of concerns about it effects on whale and other marine mammals.
6. Progress in addressing environmental controversies will need to come primarily from advances in political process rather than scientific research.

Thuwayaba Ahmad, Al Barwani, et al (2012) in this research describes an effective teaching model for public school teachers in the sultanate of Oman

1. The methodology of the research is a survey in nature, using questionnaires for data collection.

2. To ensure the reliability and construct validity, this research has applied the principal component analysis to determine whether the relevant items have been accordingly located on their respective construct.
3. In the research researcher designed a model which the Omani government can and use as a standard for effective teaching and teachers in Oman.
4. It is a unique research, the researcher shows the need of effective teaching and after that by making a model for effective teaching the researcher showed the right path to the teachers as well as suggested the good idea for government and policy makers of education.

Staver John R (2007) in the journal author explained what things are into scientific inquiry as a part of students learning the researcher suggest that.

1. Science is a way of knowing a method of learning about nature.
2. The product of scientific inquiry is the body of scientific knowledge, scientific is the body of scientific knowledge, scientific knowledge takes four forms: hypothesis, facts, laws, and theories. Hypothesis are tentative statements about relationships between variable nature. Facts are scientific observations that have been tested and confirmed repeatedly. Laws describe the behavior of specific aspects of nature under specific conditions. Theories are explanations about broad aspects of nature that encompass large numbers of hypotheses, facts, laws and events.
3. Education in science serves three purposes first, it prepares students to study science at higher level of education second it prepares students to enter the work force third it prepares them to become more scientifically literate citizens. In all three purposes we see that from this environmental education is also done.
4. Emphasizing scientific inquiry and problem solving promotes deep understanding of science.
5. Effective science teachers use techniques to promote deep scientific understanding.

Basu Saikat Kumar, Banik Sudip(2009) in this book the researcher prove that the balance in nature is disturbed the research findings are summarized as:

1. Environmental degradation is a very huge problem.
2. Several efforts have been engaged in explaining its dynamic nature links and consequences or not only the survival of human, plant and animal species but of the planet earth as well.
3. Agricultural practice, economic development energy consumption and industrialization strategic in the past might not have been environmentally sustainable.
4. It is also obvious that human life itself depends on the continuing capacity of ecosystems to provide their multitude of benefits.

5. To make the matter worse available national statistics a major requirement for quantitative study and forecasting are not highly aggregated but compiled using the traditional system of national accounts which ignores depreciation on manmade assets, degradation of natural resources as well as the feedback effects of growth and development on the individual components of the environment.

Pachuri Suresh Chandra, Pradeep Kumar (2010) in this book there is the light on all the aspects related with the environmental education.

1. The environment is a not just pretty frees tigers, threatened species of birds, animals and plants and the ecosystem, but it includes the entire entity on which we live and on which our agricultural and industrial development depends.
2. Environmental education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems and which has the knowledge, attitudes, motivations, commitments and skills to work individually an collectively towards solutions of current problems and the prevention of new ones.
3. How is environmental education taught in schools? about this question they says that environmental education is being woven in to all subjects at all grades, in addition to the obvious links to science, social studies.
4. The environmental education, awareness and training is an important scheme of the ministry for enhancing the understanding of people at all levels about the relationship between human beings and the environment and to develop capabilities skills to improve and protect the environment.

Das R.C. (2009) Aids for teaching science in class are related with environmental education. The findings are follows.

1. A terrarium may represent complete natural environment. The pupils can observe and study the plant animal relationship.
2. An aquarium may represent complete natural environment. The pupils can observe and study the plant animal relationship.
3. A biological garden to contain various types of local plant and also rare plant.
4. A science teacher should arrange field trips or visit to local centers such as factories, gardens, farms or museum. A field trip usually means a biological excursion or a nature study trip.

Best John W, Kahn James V (2011) In this book study makes about descriptive survey method. He summarized the finding as.

1. Descriptive method deals with the relationships between variables, the testing of hypotheses and the development of generalization principles or theories that have universal validity.
2. Descriptive research involves events that have already taken place and may be related to a present condition.
3. A study may evaluate the success or failure of an innovative program and also include sufficient controls to qualify as a descriptive research study.
4. The survey method gathers data from a relatively large number of cases at a particular time. It is not concerned with characteristics of individuals as individuals.
5. It is concerned with the statistics that result when data are abstracted from number of individual cases. It is essential cross sectional.
6. It must not be confused with the mere clerical routine of gathering and tabulating figures.

Sidhu Kulbir Singh (2010) In this research describes hypothesis as follows

1. A hypothesis is a tentative assumption drawn from knowledge and theory which is used as a guide in the investigation of other facts that are yet unknown.
2. A hypothesis states what we are looking for. A hypothesis looks forward. It may prove to be correct or incorrect.
3. A hypothesis is a shrewd and intelligent guess hypotheses reflect the research worker's guess as to the probable outcome of the experiment.
4. Without it research would be like a random and aimless wandering.
5. It places clear and specific goals.

Bartosh Okasana (2003)

In India there are also environmental problems. so environmental education is very important for India. The findings of this study can be summarized as;

1. According to this literature there are several explanations for the lack of research.
2. As lack of funding of EE programs and research and planning time for evaluation, the difficulty of assessing and evaluating students problems solving decision.
3. The research compares two groups of schools selected by the author after consulting with various EE provider and other EE experts.
4. According to the results schools that undertake systemic EE programs consistently have higher test scores on the state standardized tests over comparable non EE School.

6. The literature writer believes that until the educational systems are restructured to incorporate learning modeled by EE methods evaluation of its effectiveness can't take place.
7. The study compares student achievement between EE School in California

Sharma Pramila (2011) in this study the aim of education is indicated that:

Aims as a foreseen and gives direction to the activity, it is not an idle view of an idle spectator, but influences the steps taken to reach the end.

The foresight functions in three ways.

1. it involves careful observation of the given conditions to see what are the means available for reaching the end and to discover the hindrances in the way.
2. It suggests the proper order or sequence in the use of means. It facilitates an economical selection and arrangement.
3. It makes choice of alternatives possible. If we can predict the outcome of acting this way or that we can then compare the value of the two courses of action, we can pass judgment upon their relative desirability.

Yadav S.R.(2008) In this book research process is focused. Research processes constitute eight major steps.

1. Formulation of the research problem: It must be identified and defined without ambiguity.
2. Conceptualizing a research design: An extremely important feature of research is the use of appropriate methods.
3. Constructing an instrument for data collection: Anything that becomes a means of collecting information for your study is called a research instrument.
4. Selecting a sample: The accuracy of your results largely depends upon the way you select your sample.
5. Writing a research proposal: Put everything together in a way that provides adequate information for your research supervisor and others, about your research study.
6. Collecting data: many methods could be used to gather required information.
7. Processing data: The way you analyze the information you collect largely depends upon two things. (A) Type of information. (B) The way you want to communicate your findings to your readers.
8. Writing research report : It is last and, for many, the most difficult step.

Mondal Naba Kr., Roy Tanmoy, Das Chittarnjan (2009):- Have focused the achievement in environmental education in relation to attitude, cognitive style and ethics. They are the opinion that:

1. Environmental education is a lifelong learning process that leads to an informed and involved citizenry having the creative problem solving skills, scientific and social literacy, ethical awareness and sensitivity for the relationship between humans and the environment, and commitment to engage in responsible individual and cooperative action .
2. The importance of environmental education in schools has been recognized in the country for a long time. The national curriculum framework developed by the NCERT in 1988,2000 and 2005 further elaborated the scope of environmental education in school education.
3. A large number of individuals, subject experts and organizations were consulted in the process of development of policy documents.
4. Environmental education, with it aims of promoting an awareness and responsibility for the environment, should be lifelong process in order to protect the environment now and in the future.

Nasrin (2008) In this book explained about Environmental education.

1. To develop awareness in masses it is essential to frame it programmed of action at various levels of education at school level, it has been proposed to study the environmental education for school students.
2. Utilize diverse learning environments and a broad assay of educational approaches to teaching learning about and from the environment with due stress on practical activities and firsthand experience.
3. The environmental problem be analyzed and every aspect of the problem is presented before the class.
4. The teacher should provide a environmental problem to the students Interest, age, need of the students must be given priority while selecting a problem.

Saxena Rajeev (2011) have investigated environmental ism : the ethical basis and also identify the environmental problems. The findings are.

1. The environmentalism which “argues for a managerial approach to environmental problems, secure in the belief that they can be solved without fundamental change in present values or patterns of production and consumption. But this vies has been critically attacked by ecologists who are of opinion that present value patterns of distribution and consumption is detrimental and unethical to whole existence.

2. "A pollution free environment is regarded as one of the basic rights of the people throughout the world" but it is not limited to human species, every living being has an environmental space for its sustenance and beyond that every creature creation requires its own space.
3. The basic idea behind environmental space is simple: for each individual it is possible to calculate a maximum rate of consumption of environmental resources a fair share of the maximum available within global limits, while recognizing the existence of a minimum determined by need and human dignity.
4. It is clear that the environmental ethics is an extension of traditional ethics. It requires extension from human world to beyond human world. It encompasses the righteous place and fair share of every constituent on this planet. The ethics which should have covered the all living and non living world up to the limit of cosmos.

Ahluwalia S.P, Bais H.S(2010) In this book describe Some guidelines which may stimulate educators and attract their interest and attention are.

1. The environment should be considered in its totality natural and built technological and social (economic, political, cultural, historical, moral and esthetic)
2. The environmental education should be a continuous life long process, beginning at the preschool level and continuing through all formal and non formal stages of education.
3. Environmental education is interdisciplinary in its approach, and hence should draw on the specific contents of each discipline in making possible a holistic and balanced perspective
4. Environmental education should examine major environmental issues from local, national, regional and international point of view. Environmental education should focus on current and potential environmental situations. It should promote the value and necessity of local, national international co-operation in the prevention and solution of environmental problems.
5. Environmental education should explicitly consider environmental aspects in planning for development and growth. It should enable learners to have a role in planning their learning experiences. Likewise, it should ensure that educators have a reasonable contribution in its acceptance, adoption and implementation.

Alwardt Randi Kay(2011):-The book 'start with WHY: How Great Leaders Inspire Everyone to Take Action' is reviewed by Randi Kay. In this book Simon Sinek inspires reader to understand the process of change. The review states the following:

- 1) The idea of starting with why will help education leader to reach to the fullest implementation of ideas and practices that take place in schools.
- 2) The what is the products of the hows and whys. In the schools it is the students and parents. Thus why defines the layout and provides multiple inspirational stories for a teacher to make a great school.

Statement of the problem:

The study of an effectiveness of environment education through Science.