CHAPTER - II

REVIEW OF RELATED LITERATURE

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2.1 Review of related literature

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- 2.2 Review of related research
- 2.3 Guidelines received from the review of related literature

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CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

In previous chapter researcher has given brief introduction of the research work. In the present chapter, review of related literature has been given.

'The search for related literature is one of the important steps in the research process. It is a valuable guide to defining the problem, recognizing it's significance, suggesting promising data-gathering devices, appropriate study design and sources of data.'¹

The review of related literature serves following purposes

i] Deeper understanding of one's own problem.

ii] Direction for selection of methods, tools and techniques.

iii] Guidance in making interpretations and drawing conclusions.

iv] Avoiding unnecessary duplication.

The review of related literature taken by researcher is as follows,

2.1 Part - I Review of Related Literature

World Federation of Engineering Organization Committee on Engineering and Environment has given the code of environmental ethics for Engineers. In these codes it concluded that, war, greed, misery and ignorance, plus natural disasters and human induced pollution and destruction of resources are the main causes of the progressive impairment of the environment and as a member of the Engineering profession, deeply involved in the promotion of development, must use their talent, knowledge and imagination to assist society in removing those evils and improving the quality of life for all people.²

In the report of International training Seminar On Environmental Education for Educational Planners and Administrators – New Delhi, 1990.

This discussed about obvious need for further development of EE in Technical and Vocational education (TVE) has been discussed, new evidence, based on research and consequences of new economic and industrial activities and hence the need for continuing environment education for all those who may have received initial EE during their preparatory courses in TVE. There is need to learn basic theoretical and scientific bases of technologies applied to solve the problems along with the totality of the impact.³

Ali Musharraf S. (1992) has discussed about, Environment, Man and Pollution, and also about Environmental Laws.

In the chapter on teaching of Environmental law as a curriculum subject, author has pointed out that only a few law schools have accepted Environmental studies either as a compulsory subject or an optional one.

According to him it will not be fair to prescribe only legislative and textual material and fortify the same with the study of relevant case law but it will be necessary to recommend the relevant readings from other disciplines, such as economics, industry and science particularly biological and medical science.⁴ 50

Kukreti B. R. (1993) In his article has discussed about Environment Education Through Formal Education.

Formal education is provided in controlled and organized atmosphere. Through formal education environmental knowledge, understanding, skills and values can be developed among the youth and they can be encouraged to expand Environment Education.

At higher education level, Environment education should be included in curriculum as a separate subject. At this stage various national and international problems of environment should be also be included in curriculum. Research work also be given proper place in the curriculum. The environment education should also be included in the curriculum of Teacher Training Institutions, Industrial Training Institutions, Polytechnics, Engineering Colleges, Extension Training Centres and Administrative Training Institutes, so that after receiving the training when they are engaged in government and non-government services, the students will be able to expand the Environment Education in society.⁵

Murdie Alan (1993) In this book author has discussed about Environmental Law, outline of the Environmental protection Act, 1990, prosecuting Environmental crimes and Environmental Acts like the clean Air Act of 1956 and 1968, Water pollution act, Wildlife and countryside Act 1981, Civil and Private Law in environmental protection etc.⁶

Sinha A. K. (1997) In his article author has discussed that, a specialized course for technicians and professionals should be made available like social science and Humanities subjects in the syllabus along with main course of Engineering. The structure of these courses might be as simple and easy for adaptation which could enable even the common man to protect himself from deteriorating effect of environment and to develop in them spirit of self dependence and protection.

The courses on environment should be included in the form of general and compulsory subjects both in Engineering curricula and other graduation courses as a subsidiary or other knowledgeable subjects being taught to them in accordance to their future prospects and professions.⁷

According to Suresh K. Dhameja (2005) those working in the scientific and technological field share a greater responsibility for protection of environment. Teachers in technical institution can play a major role in promoting the concept of sustainable development. Teachers in technical institutions teach the students how to design and build a dam or a hydro power system or thermal plant, how to set up a sugar, paper or other mill, how to build multistoreyed building, bridges and roads.

It is therefore, important that teachers should convey these concept to the students at every stage of teaching of curriculum and help to develop an environmentally friendly attitude amongst students so that the care of environment and the need to protect natural resource inherently reflects in all their activities.⁸

Krishnamacharyulu V. and Reddy G. S. (2005) author have discussed about concept of Environment and importance of Environmental Education. They have also discussed about the nature and scope of Environment Education, aims and objectives of Environment Education, important events in Environment Education, concept and need for sustainable development, Role of governmental and non-governmental agencies, Laws on pollution control. The role of teacher in Environmental Education.⁹

Molia M. S. (March 2007) has discussed about environmental issues, especially global issues can often appear nebulous and disconnected from a learner's life. When studying about global issues the goal needs to be more than merely acquiring scientific knowledge. A relationship must be

made between the individual action and responsibility to the global issue. For meaningful learning decision – making and problem solving approaches with global issues are used. There are many situations in which creative problem solving dealing with environmental issues can be used in learning settings. A need was indicated by teachers for having a new curricula at all academic levels to address the goals of environmental education. The challenge of environmental education is to make global issues meaningful to learners by focusing on individual contributions to the problems and then, wing problem solving decision making strategies to develop, refine and redirect the thinking and the learning.¹⁰

According to Ambasht R. S. (1988-92) in the international context as well as in the context of scientific information generated on ecology and environment in India, the researches on Environment Education teaching are very inadequate and need outright promotion at all levels and regions. Implementation of a well planned national programme emerging at the grassroots level all over the country is needed.¹¹

Remedio M. Elizabeth in his article no date viewed on 12/12/2007 entitled 'Sustainable Forestry and Wood Energy Education : A Crisis in Pedagogy' had discussed that Education is seen as a key avenue in exploring humanity's creative ingenuity as we now prepare to rectify the environmental damages inherited form the activities of the past. The role of education in carrying out the sustainable development concept is critical even though it's present status appear to be tangential. Traditional education was meant to respond to problems in the past. Contemporary problems need to be addressed differently as a function of educational upgrading, curriculum planning & instructional management.¹²

Menon Mahesh (2006) in his article entitled 'University of California has world's greenest courses' has discussed about Multi-disciplinary research facilities provided in University of California. The consortium on Green Design and manufacturing (CGDM) University of California, Berkeley was formed in 1993 to promote multi-disciplinary research and education in environmental management. Besides many initiatives taken by the University authorities, numerous environmental management courses are offered to the students as well. University has also paved a way to make the younger generation more widely educated and knowledgeable about the different facts of environmental management.¹³

Andrew Haines and Antony J. McMichael and Paul R. Epstein in their article entitled 'Environment and health : Global climate change and health' (no date, viewed on 15/12/2007) have discussed about signals of climate change, Health impacts, modelling the effects of climate change. Multidisciplinary research into the identification understanding and modelling of health impacts needs support, as do intergovernmental and interagency collaborations to develop health early warning systems that can facilitate timely, environmentally friendly public health interventions.¹⁴

Speidel Joseph J. in his article (no date, viewed on 15/12/2007) 'Environment & health : Population, Consumption and human health' has discussed about population growth, interactions between population, consumption, the environment and health, facing the challenges of poor health, facing the challenges of poor health, rapid population growth and high consumption levels. Governments and international development agencies should eliminate environmentally unsound development projects and subsidies for a large array of ecologically unsound practices and products. Development of wind, geothermal, photovoltaic and other ecofriendly sources of energy is needed. Efforts to address the environmental impact of consumption must give attention to the damage and waste caused by conflict and worldwide outlays for military activities.¹⁵ A Report from U.S. Embassy Beijing (December 1996) entitled 'State Council Calls for Public Environmental Education and Activism'. Says that everyone should know the law, all schools should teach it. All regions, departments and units must regard legal knowledge about environmental protection as an important part of the training for their officials and staff. Universities middle school, and primary school should also carry out environment education. A public participation mechanism should be established to encourage the general public to participate in the work of environmental protection and to report and expose various offenses against environmental laws and regulations. Media i.e. Newspapers, Radio, Television and other media institutions should report and praise the advanced models in the work of environmental protection as well as expose and criticize pollution and environmental damaging offense.¹⁶

Part - II Review of Related Researches

Dhawan Seema (August 2005)

Title : Environmental Education In Pre-Service Teacher Education.

Objectives:

- 1. To compare the environmental knowledge, awareness and attitude of B. Ed. students of Gorhwal University before and after the training.
- 2. To investigate the effectiveness of syllabus of environmental education in the B.Ed. course of Garhwal University.

Methodology :

1) Survey Method

- 2) Tools :
 - 1) Environmental knowledge scale for Teachers (EKST)
 - 2) Environmental attitude scale for Teachers (EAST)
- 3) Analysis : Mean value, Standard Deviation, Percentage and t-test.

Findings :

- Pupil teachers before the training have less environmental knowledge, awareness and attitude as compared to the after training.
- The environmental awareness and attitude of pupil teachers before the training show very low positive correlation.
- 3) There exists a moderate correlation between the environmental awareness and attitude of pupil teachers after the B.Ed. course.¹⁷

Jayanta Mete, Parama Samadder (2006)

Title : Development and Implementation of Environment. Education Curriculum for Secondary School : The Indian Context.

Objectives:

- 1) To analyze the recommendations of the Tbilisi conference and that of UGC and NCERT, India.
- To pinpoint the goals and objectives of EE recommended by these International and National Expert Committees.

- To determine the stages of EE recommended by UNESCO, UGC, and NCERT in India.
- To analyse the curriculum recommended by UNESCO (1983) and NCERT.
- 5) To analyze the procedural approach for implementation of EE

Findings

According to NCERT (1988), the school curriculum should attempt to create awareness in the pupil about resources, about the ecological balance and man's relationship to the environment.

A comparison of the curriculum of CBSE, ICSE and state Boards of S. E. including WBSE indicated that the following pattern of EE has been recommended at the secondary level of school system.

- 1. At the middle level environmental study is not prescribed as a subject. But science as an integrated course.
- 2. At the secondary level, the subject of science includes many topics concerning awareness and protection of environment.

Conclusion

- 1. For teaching environment and teachers have to be both knowledgeable and very practical and they should be interested in teaching.
- 2. For teaching environment material aids could be used with considerable benefits as they generate interest in all types of audiences.

 Community work could be employed for making children aware about the problems people face in degrading environment and therefore teaching could be more fruitful.¹⁸

Vipinder Nagra and Jaswinder Singh Dhillon (July 2006)

Title : Environmental Education Awareness among secondary school teachers.

Objectives:

- 1) To study the environmental education awareness of secondary teachers in relation to residential background.
- To study the environmental education awareness of secondary school teachers in relation to subject of specialization.
- To study the environmental education awareness of secondary school teachers in relation to sex.

Methodology

1) Method : Survey Method

2) Total sample of 1800 secondary school teachers was selected using stratified random sampling from five districts of Punjab.

3) Tool : Questionnaire

4) Analysis : Mean value, and percentage

Conclusion :

1) Teachers in urban schools were more aware about environment and it's related problem than their counter parts. 2) Male and female secondary school teachers showed significant variation in environmental education awareness where the former group showed higher awareness than the latter.¹⁹

Pande Sushma (2007)

Title : Environmental Awareness among Karal and Urban Children : A Comparative Study.

Objectives:

- To know the level of knowledge related to environment in urban and rural upper primary class students.
- To learn about the views of the teachers towards the degree of importance they attach to environment education.

Methodology

- 1) Method : Survey method
- 2) Sample

Selected	Selected	Govt.	Pvt.	Selected	Selected	Selected	Total
Areas	School	School	School	Trs.	Class	Student	
Rural	05	03	03	20	05	30%	150
Urban	05	03	02	20	05	30%	150
Total	10	06	05	40	10		300

3) Tools :-

- a) Environment awareness scale for students.
- b) Teachers attitude scale towards teaching Environment.
- 4) Analysis : Percentage.

Conclusion

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- The urban students had much better knowledge of the environment and it's related problems than their rural counterparts, who faired badly.
- Both urban and rural teachers are aware of the environment and know all about it's protection and preservation. But they regard the prevailing school conditions very unsatisfactory.²⁰

Ehsan, Md. (1985)

Title : An Evaluative study of the Environmental Education programmes in the primary schools of Bangladesh.

Objectives:

- 1) Evaluation of objectives against the criteria : Whether stated clearly, precisely.
- 2) Evaluation of content against the criteria relevance clarity, uptodatedness, ability and experience etc.
- 3) Evaluation of teaching learning strategies.

Methodology

1) Method - Survey Method

2) Sample – 107 respondents, of them 32 were primary school teacher educators and 75 primary school teachers.

3) Tool : Questionnaire.

Findings :

- The general programme objectives of teaching environmental studies (Science) had not been explicitly stated in existing programmes.
- 2) The content also needed to be psychologically and logically organized in order to maximize learning.²¹

Gharpure, M. B. (1985)

Title : Medical Education in Marathwada - A study

Objectives:

- To study the facilities available in medical colleges in Marathwada.
- 2) To study whether the content of medical education was in conformity with the needs of the Marathawada region.

Methodology: 1) Method - A case study

2) Tool : Questionnaire, Interviews of Deans and teachers and visits to institutions.

Findings

- 1) Marathawada colleges were deficient in the teaching staff prescribed by the Medical Council of India.
- The internship training programme in Marathawada was not successful.²²

Gupta A. (1986)

Study of Attitude of Teachers towards Environmental Education.

Objectives:

- To develop a tool to measure the attitude of teachers towards Environmental Education.
- 2) To measure the attitude of teaches teaching at various levels towards environmental education.

Methodology: 1) Method - Survey Method

2) Sample : 150 in service teachers at primary, secondary and junior college levels admitted to vocation course, B.Ed. College, Nagpur.

3) Tool : Likert type attitude scale

4) Analysis : Chi-square test

Findings

Though, in general, the teachers had shown a favourable attitude toward various dimensions of EE their divided opinions or unfavourable attitude towards some issues on the attitude scale indicated their lack of awareness of the interdisciplinary nature of the subject.²³

Rajput J. S. (1988)

Title : A research study for identification of teaching skills and training strategies for implementing the environmental approach at primary level. An independent study.

Objectives

 To develop a strategy for teaching Environmental studies I and II in classes III and IV through the environment approach and to test the relative efficiency of the developed strategies in relation to the methods being used for realization of the objectives of primary education.

2) To identify teaching skills for the teaching through the environmental approach.

Methodology: 1) Method - Experimental method.

2) Analysis - 't' values and 'F' ratio were calculated.

Major Findings

The results of comparison between the groups and within the groups indicated that out of fourteen groups, five groups had no significant differences in both cases.²⁴

Shahnawaj (1990)

Title : Environmental Awareness and Environmental Attitude of secondary and higher secondary school teachers and students.

Objectives

- 1) To determine the extent of awareness about the environment among students and teachers.
- 2) To find out the attitudes of teachers and students towards the environment.

Methodology: 1) Method - Survey Method

2) Tool : Tool developed by the investigator to test attitudes and awareness.

Findings

- 1) Teachers had more awareness of the environment than students.
- 2) Trained and untrained teachers did not differ on environmental awareness.²⁵

Sing Gulzar (1991)

Title : A comparative study of attitudes towards population education, environment education and family planning of different levels of workers of specific occupation.

Objectives

To compare the attitudes towards population education, environmental education, family planning of different vocational groups with different levels of income and educational background.

Methodology: 1) Method Survey Method

2) Sample : Stratified random sampling 594 households includes six occupations for every 99 households.

3) Tools : Attitude scale measuring attitudes towards for population education, Environment education and the attitude towards family planning prepared by Hakim and Singh were used in the study.

4) Analysis : Mean, SD and 't' test.

Major Findings

1) For population Education –

Doctors had a more positive attitude than administrators, engineers, teachers and business.

 For Environment Education – educational specialization tended to determine a more positive attitude with the sequence being Doctors, Engineer, Administrators, Teachers, Businessman and Agriculturists.²⁶

Praharaj B. (1991)

Title : Environmental knowledge, environmental attitude and perception regarding environmental education among preservice and inservice secondary school teachers.

Objectives

- To find out the level of environmental knowledge and attitude of preservice and in service secondary school teachers.
- To study their perception regarding environmental education in the secondary school.

Methodology: 1) Method - Survey Method

2) Sample : Stratified random sampling. 302 in-service teachers serving in50 secondry schools. 416 preservice teachers of three teachers training colleges.

3) Tools :

- a) The Environmental knowledge Inventory.
- b) Attitude scale.
- c) Questionnaire : on perception of environmental education.
- 1) Analysis : Percentages, 't' tests and one way ANOVA.

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Major Findings

- 1) The level of environmental knowledge was found among preservice teachers although conceptual knowledge was moderate.
- 2) Among the in-service teachers environmental knowledge was moderate and factual knowledge about the environment was low.
- There was moderate correlation between environmental knowledge and environmental attitude.²⁷

Kaur, Harjit Pal (1992)

Title : A study of population awareness in relation to attitudes towards environmental education and population education of professional teachers.

Objectives

- To compare the attitudes toward environmental and population education of different types of teacher having different levels of population awareness.
- Compare the attitudes towards environmental education and population education of different types of male and female teachers having different levels of education.

Methodology: 1) Method - Survey Method

2) Sample : 400 senior secondary school teachers, college and university teachers, Agricultural university teachers, Medical college teachers and Engineering college teachers from Punjab and Chandigarh were selected.

3) Tools :

1) Scale of Attitude towards environmental education scale.

- 2) Scale of Attitude towards population education scale.
- 3) The population awareness scale (NCERT)

Analysis : Mean SD and 't' test.

Major Findings

- In the case of both males and females no differences existed in the population awareness of different categories of teachers.
- The level of population awareness was not related to the attitude towards environment education.²⁸

Khade Sopan (2003)

Importance of Environment Education In Curriculum Extra – Curricular activities implemented in B.Ed. Colleges.

Objectives

- 1) To identify elements of environment education.
- 2) To find out the co-curricular activities implemented in B.Ed. colleges.
- 3) To find out the Extra-Curricular activities implemented in B.Ed. colleges.

Methodology: 1) Method - Survey Method

2) Sample : 8 aided and 17 unaided teacher education colleges from Shivaji University by multistage random sampling.

3) Tools : Interview, Observations.

Conclusions

Place of environment education in extra-curricular and cocurricular practical work teacher education colleges of Shivaji University was unsatisfactory.²⁹

Mane, G. M. (2004)

Development of strategies to communicate environmental concepts from IX standard English text book among adolescents.

Objectives

- 1) To analyze unit No. 1 from the IX Std. English language textbook and identify the environmental concepts reflected in it.
- To prepare a package of communication strategies for teachers (PCST) to communicate the identified environmental concepts to IX std. adolescents while teaching English.
- To evaluate the usefulness of PCST in communicating environmental concepts among IX std. adolescents.
- 4) To make appropriate suggestions for improving the PCST package for effective communication of environmental conceptual through teaching of English to IX std. adolescent.

Methodology: 1) Method – Survey Method

2) Sample: Stratified Random SamplingStudents sample : 1021Teacher sample : 15

3) Tools :

- 1) The package for communication of strategies for Teachers (PCST)
- 2) Interview schedule for std. IX English subject Teachers to find out the usefulness of PCST.
- 3) Achievement test for IX std. adolescents.

Conclusions

- 1) Teacher need to be given training for effectively integrating teaching of English with Environment Education.
- The effectiveness of PCST depends upon the proficiency of the IX std. English teachers in using it.³⁰

2.3 GUIDELINES RECEIVED FROM THE REVIEW OF RELATED LITERATURE

From all above review it was noticed that, the topic taken for the study were mainly Environmental Awareness and Environmental Attitude of secondary and higher secondary school teachers and students. For this study survey method was used. A comparative study of attitudes towards population education, environment education and family planning of different levels of workers in specific occupations was done by survey method. Study of attitude of teachers towards Environmental Education was done by survey method.

An Evaluative study of the Environmental Education programmes in the primary schools of Bangladesh was done by survey method. Environmental knowledge, environmental attitude and perception regarding environmental education among pre-service and inservice secondary school teachers. For this survey method was used. A research study for identification of teaching skills and training strategies for implementing the environmental approach at primary level as done by experimental method.

From all these studies following points were noticed,

- 1. In these researches, mostly survey method was used.
- 2. Questionnaire, Interview, attitude scales. Environmental knowledge Inventory were the tools use for collecting the data.

From the above studies following findings were observed,

- 1. Teachers had more awareness of the environment than students.
- 2. Doctors had more positive attitude than Administrators, Engineers, Teachers and Businessman.
- 3. The level of environmental knowledge was found low among preservice teachers although conceptual knowledge was moderate.
- 4. Place of environment education in extra-curricular and co-curricular practical work of teacher education colleges of Shivaji University was unsatisfactory.
- 5. There exists moderate correlation between the environmental awareness and attitude of pupil teachers after B.Ed. Course.

From the above study it was noticed that study of Environment Education in different professional education courses was not done. Therefore this particular research is original.

In this chapter researcher has presented review of related literature. In the next chapter researcher has discussed about methodology of research.

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