CHAPTER 6

Summary...
6. SUMMARY

Environment is essential for all life forms on the planet Earth. There is an essential dependence of all living beings including human beings on the environment, with which they interact continuously. As environmental issues are becoming more complex and difficult to manage as well as control, there is a growing need for improvement in public understanding of environmental science and policy. However, human beings are solely responsible for changing the environment by indiscriminate use of the natural resources and deteriorating the quality of air we breathe, water we drink, soil we depend upon for food and shelter as well as loss of natural bio-diversity. Therefore, the onus of protecting natural environment for the present and future generations also rests with human beings alone. For this to realize, society needs environmentally literate citizens. Comprehensive and meaningful environmental education is a promising avenue for equipping members of society in identifying potential solutions to environmental problems in order to protect valuable natural resources and our natural environment as a whole. Environmental education can produce an environmentally literate citizenry which would be able to actively address environmental challenges and problems. Environment education is required, so that people become aware and protect the earth's environment by taking informed decisions and making environmentally friendly actions. In the holistic educational philosophy for 21st century, it is stated that "the ecology of planet earth has to be preserved from mindless destruction and ruthless exploitation, and enriched for the welfare of generations yet unborn, and that these should be a more equitable consumption pattern based on limits to growth, not unbridled consumerism".
It is essential that people are made aware through education and training about protection and conservation of the environment. This will then inculcate in them sensitivity towards environmental issues and develop a responsible attitude towards the environment.

Teacher's can play a pivotal role in transmitting knowledge and creating awareness about the environment and help to tackle the local and global environmental issues. The teaching community should be motivated and committed to the cause of realizing the goals of environment education and should take initiatives in designing the relevant and effective program on environment education. However for teachers to succeed in their enterprise and endeavor for spreading environmental awareness, it is important that the educational institutions should provide conditions conducive for it. It is essential that teachers should be properly trained themselves on environment concepts and skills to impart training to learners. Teachers should be well equipped with the knowledge method and teaching learning, material to inculcate the right understanding of positive attitude towards environment in the learners. To create a workforce and community of environmentally aware and concerned citizens, technology can play a vital role. However, insufficient teacher preparation has been identified as one of the factors in the weakness of environmental education efforts and environmental education curriculum. Adequate environmental education preparation of students in teacher-training programs is essential for helping future teachers to design and implement effective environmental education curriculum. There has been some research previously on environmental literacy of pre-service as well as in-service teachers.
The state of natural environment in India too is no different due to growing population, urbanization and industrialization. Threat to live is being felt by the people of the country and government as the pace of deterioration of environmental indicator is much faster. Government took an initiative in early 70's and started thinking about environmental education under different ambits of NCERT, education policy and other agencies but the yield in terms of consensus on the issue and subsequent successful implementation is very poor. It is only after 2003 order of the Hon'ble Supreme Court of India that environmental education is made mandatory at each level of education and for all. The court orders were followed by policy makers and government, and environmental education has been incorporated at all levels of education i.e. primary, secondary, colleges and university levels. But the core course/curriculum on environmental education is yet to take shape. It is being taught as a part of science syllabi. It is well understood that environmental education is a true multidisciplinary subject and need the expertise accordingly. But it is being taught by teachers who have never undergone any formal training of the subject. Therefore, proper justice to the subject and to the student for developing proper environmental awareness and attitudinal changes for sustenance of natural environment is strongly lacking across the country.

Here an attempt was taken to record the environmental awareness and attitude towards our natural environment of pre-service and in-service elementary and secondary school teachers in the delimited area of study. This would help us to know the exact status as on date and to guide policy makers to make necessary changes so as to improve on teacher's environmental
literacy. It is only after this, that the teachers have sufficient environmental literacy level and have favorable attitude towards environment, the future generation can be made aware about such an important issue and its solutions.

STATEMENT OF THE PROBLEM

The study entitled “A study of Environmental Awareness and Attitude of Pre-service and In-service Elementary and Secondary School Teachers” was undertaken during this work.

OPERATIONAL DEFINITIONS OF THE KEY TERMS

Environmental Awareness

“Environmental Awareness means to help social groups and individuals to acquire an awareness of and sensitivity to the total environment and its allied problems.”

Environmental Attitude

Environmental attitude mean attitude of an individual towards our natural environment and may be defined as “the collection of belief, affect and behavioral intentions a person holds regarding environment related activities or issues” (Schultz, 2004). The individual’s opinion about preservation and utilization makes the basis for his/her environmental attitudes. These are a set of social values, strong feelings of concern for the environment and the motivation for active participation in its protection and improvement.

Pre-service Elementary Teachers

Pre-service Elementary Teachers involved those subjects who are being trained for teaching of class 1 to VIII i.e. doing their JBT or D. Ed. Course from recognized institutions. There educational background is not
considered in defining pre-service elementary teachers; the minimum qualification they should carry is 10+2 but may possess higher degrees like bachelor in science, social science or education.

**In-service Elementary Teachers**

Teachers who are involved in regular class room teaching of class I to VIII in any approved school whether owned by self or by any society or by government after passing the required diploma like Junior Basic Training (JBT) or Diploma in Education (D. Ed.) etc. Their educational background is not considered in defining in-service teachers; the minimum qualification they carry is 10+2 and the diploma but might have possessed higher degrees like bachelor in science, social science or education.

**Pre-service Secondary School Teachers**

Those individuals who are undergoing the bachelor degree in education in any institution (self owned or government owned) recognised by the competent body like National Council for Teacher Education (NCTE) and are affiliated to any university. Their educational background is not considered in defining pre-service teachers; the minimum qualification they should carry is bachelor degree in social science or science or equivalent but may possess higher degrees like masters in any discipline or even Master of Philosophy or Doctorate.

**In-service Secondary School Teachers**

Those individuals who are teaching class IX to XII in school (self owned or government owned) recognised by the competent body like CBSE or state education boards. Their educational background is not considered in defining in-service teachers; the minimum qualification they carry is bachelor
degree in any discipline and education but might have possessed higher
degrees like masters in any discipline or even Master of Philosophy or
doctorate.

Following objectives were set for the present study on
"Environmental Awareness and attitude of Pre-service and In-service
Elementary and Secondary School Teachers":

1.1 To study and compare the pre-service elementary and secondary
school teachers on their environmental awareness.

1.2 To study and compare the in-service elementary and secondary
school teachers on their environmental awareness.

1.3 To study and compare the pre-service and in-service elementary
school teachers on their environmental awareness.

1.4 To study and compare the pre-service and in-service secondary
school teachers on their environmental awareness.

2.1 To study and compare the pre-service elementary and secondary
school teachers on their attitude towards environment.

2.2 To study and compare the in-service elementary and secondary
school teachers on their attitude towards environment.

2.3 To study and compare the pre-service and in-service elementary
school teachers on their attitude towards environment.

2.4 To study and compare the pre-service and in-service secondary
school teachers on their attitude towards environment.

3.1 To study the relationship of environmental awareness with attitude
towards environment of pre-service elementary school teachers.
3.2 To study the relationship of environmental awareness with attitude towards environment of in-service elementary school teachers.

3.3 To study the relationship of environmental awareness with attitude towards environment of pre-service secondary school teachers.

3.4 To study the relationship of environmental awareness with attitude towards environment of in-service secondary school teachers.

HYPOTHESES OF THE STUDY

Following null hypotheses have been formulated to meet the above cited objectives of the present study:

1. Pre-service elementary and secondary school teachers do not differ significantly on their environmental awareness.

2. In-service elementary and secondary school teachers do not differ significantly on their environmental awareness.

3. Pre-service and in-service elementary school teachers do not differ significantly on their environmental awareness.

4. Pre-service and in-service secondary school teachers do not differ significantly on their environmental awareness.

5. Pre-service elementary and secondary school teachers do not differ significantly on their attitude towards environment.

6. In-service elementary and secondary school teachers do not differ significantly on their attitude towards environment.

7. Pre-service and in-service elementary school teachers do not differ significantly on their attitude towards environment.

8. Pre-service and in-service secondary school teachers do not differ significantly on their attitude towards environment.
9. There is no significant difference between the Environmental Awareness and attitude towards environment of in-service elementary school teachers.

10. There is no significant difference between the Environmental Awareness and attitude towards environment of Pre-service elementary school teachers.

11. There is no significant difference between the Environmental Awareness and attitude towards environment of in-service secondary school teachers.

12. There is no significant difference between the Environmental Awareness and attitude towards environment of Pre-service secondary school teachers.

**RESEARCH INSTRUMENTS USED IN THE STUDY**

After doing the sufficient market survey for the availability of research instrument in environmental education area, the two research instruments entitled *"Environmental Awareness Ability Measure Test – (EAAM)"* prepared by Dr. Praveen Kumar Jha and *"Environmental Pollution Attitude Scale (EPAS)"* by Dr. M. Rajamnaikam published by Rakhi Prakashan, Agra (India) were finalised for assessing environmental awareness and attitude towards environment respectively of the pre-service and in-service elementary and secondary school teachers. The statistical reliability and validity was the major criteria for selecting the above cited instruments among the available ones in the market.
STATISTICAL TOOLS USED IN THE STUDY

The descriptive statistical tools such as mean, mode, median, standard deviation, coefficient of variance, skewness, box and whisker plot, frequency distribution and two tailed t test at 95% and 99% percent confidence limit were used for the data analysis and testing of the null hypothesis to meet the objectives.

DELIMITATION OF THE STUDY

Environmental education need to be imparted to all sections of society like poor and rich, rural and urban, children, young and old to safeguard the natural environment. Present study is planned to assess the environmental awareness and attitude towards environment of pre-service and in-service elementary and secondary school teachers considering the fact that teachers are main vehicles for imparting knowledge to the children, the future torch bearers of the society. To achieve reliable and significant information in a timely manner, present study has been delimited to teachers working in Primary and Secondary schools of Gurgaon, Rewari and Mohindergarh districts of Haryana state and pre-service teachers, preparing themselves to be a elementary or secondary school teacher in District Institute of Educational Training (DIETs) and Colleges of Education in these three districts of Haryana. The rationale for such delimitation was that these districts represent different geographic, social and economic settings. Gurgaon district shares the boundary with national capital of Delhi and is representative of fairly rich urban whereas Mohindergarh district, located in deep southern part of Haryana can be taken as rural dominated area with middle class population. Rewari
being located between these two districts represent a transitional setup. In case of pre-service elementary and secondary school teachers pursuing their courses in District Institutes of Educational Training and Colleges of Education, whether private or state owned, a significant number of institutions in both categories have been covered. In case of in-service teachers due care was given while choosing the school to cover a true representative picture.

SIGNIFICANCE OF THE PRESENT STUDY

In the light of the present physical state of natural environment in India, issues related to sustainable development, failure of technological innovations in meeting the need of mankind without disturbing the nature, the environmental education seems to be the only solution for finding suitable path for sustainable development. With the thrust given to Environmental Education in the new policy of education (1986) and the direction of the Hon’ble Supreme Court (2003), efforts have been made to include EE in the school curriculum as a separate subject and recognize the content and methodologies of teaching at the school level for its effective implementation. EE focuses on two important parameters namely environmental awareness and attitude towards environment.

The introduction of the Environmental Education programme requires the involvement and participation of teachers, students and administrators. It offers teachers a rich and diverse array of activities and opportunities to enrich their classroom teaching and help children develop positive attitudes and behaviour towards environment. The EE at training colleges should not only create Environmental Awareness but should develop basic knowledge and
skills required to impart these among the pupils. EE can become most relevant, effective and functional when its goals and objectives as well as its implementation are based on recognized needs of its target groups at international, national, regional and local levels. It proves actually to be a new kind of integrative teaching, which is characterized by a training of inclusive thinking, by a continuous training of habits in small steps, and by the development of a general attitude of openness to new aspects.

For the effective programme of EE, our teachers themselves should possess enough environmental awareness, positive environmental attitude towards environment and skill of achieving objectives in relation to their students. For this purpose, it is also needed to have adequate EE programme for pupil teacher in their training course. In order to impart effective teacher training in this field, an understanding of the aims and objectives of EE, its contents and approaches, efforts made in the field and the skills required for imparting the environmental values to the students, future builders of the nation, became a fundamental prerequisite. This study will provide the current status of environmental awareness and attitudes towards environment of teachers of two selected categories. This information will further guide the institutions, policy makers and government to take necessary steps to train the pre-service and in-service teachers and to incorporate environmental education in the teachers training curriculum.

MAJOR FINDINGS

The level of teaching i.e. elementary or secondary as well as status of teacher i.e. teacher trainee/pre-service or in-service has least effect on their
environmental awareness levels. All teachers irrespective of their education, gender, year of teaching experience has got very high level of environmental awareness with very limited cases of average environmental awareness level. However, the teacher training and teaching experience seems to increase the absolute scores of individuals on environmental awareness of teachers, reflecting a positive impact of these parameters on environmental awareness levels.

All teachers have neutral to slightly moderately favorable attitude towards environment. Teachers of all category and status are strongly lacking on their pro-attitude towards environment. The high levels of environmental awareness among all category teachers have not transformed into their behavior changes. Therefore, the yield in the attitude of children towards environment is less likely to occur at the desired pace.

The specific findings of the present study vis a vis objectives of the study are listed here below:

1. All pre-service and in-service elementary and secondary school teachers are highly aware about our natural environment, and related problems and their solutions.

2. Pre-service elementary and secondary school teachers have significantly different levels of environmental awareness.

3. In-service elementary and secondary school teachers have same level of environmental awareness.

4. Pre-service and in-service elementary school teachers are equally aware about environment and related issues, and both carry high level of environmental awareness.
5. Pre-service and in-service secondary school teachers also have similar understanding about their natural environmental, an observation similar to pre-service and in-service elementary teachers.

6. The pre-service teachers' of both category have neutral attitude towards environment whereas the in-service elementary and secondary school teachers' have moderately favourable attitude towards their environment.

7. Pre-service elementary and secondary school teachers do not differ significantly (at p <0.05) on their attitude towards environment whereas they have differed on their environmental awareness levels.

8. In-service elementary and secondary school teachers also do not differ significantly (at p <0.05) in their attitude towards environment.

9. Pre-service and in-service elementary school teachers differ significantly (at p <0.05) on their attitude towards environment whereas they did not differ on their environmental awareness.

10. Pre-service and in-service secondary school teachers also differ significantly (at p <0.05) on their attitude towards environment.

11. There are significant differences (at p <0.05) between the environmental awareness and attitude towards environment of in-service elementary school teachers.
12. Environmental awareness and attitude towards environment of Pre-service elementary school teachers also differ significantly (at p <0.05).

13. In-service secondary school teachers show significant differences on their environmental awareness and attitude towards environment.

14. Pre-service secondary school teachers also differ significantly in their environmental awareness and attitude towards environment.

Some of the findings obtained in the present study are partially in accordance with studies done earlier but strong differences were also noticed. The time gap between the present study and previous study could be possible reason for such differences in the observations as the nature of exposure by present day teachers is significantly different compared to old ones and the syllabi of training institute as well as school has been modified significantly in last decade. Researcher could not find any recently conducted similar study to compare with. The attitude of the teachers towards environment can be changed based on some of the strategies listed below - Expose the teachers to recent developments on environmental issues like global warming and so on; Encourage teachers to participate in workshops and conferences on environmental science and environmental education; Update the teachers knowledge on environmental related issues through refresher courses/ crash courses; Compulsory environmental studies in all levels of education from primary to post graduation.
IMPLICATIONS OF THE STUDY

It is revealed from the present study that environmental awareness level of pre-service and in-service elementary and secondary school teachers is very high, and all of them carry neutral to slightly moderately favorable attitude towards environment. This tells us that proper or high environmental awareness does not ensure proper positive attitude toward environment, and its related problems and their solutions, whereas it is attitude or behavior which really helps an individual in caring for the environment. Therefore, it is required that we may think and devise alternative methods and means towards development of favorable attitude towards environment among teachers, which may ultimately help in creating environmentally aware students and citizens. Having high level of environmental knowledge by a teacher or any individual neither solve the problems of deterioration of environment quality nor help in producing environmentally literate citizens. It further adds to poor implementation of environmental education at school level. The researcher felt that environmental education practice with regard to its take-up in primary and secondary school is inadequate and it does not achieve the outcome communicated in the policy documents. The implications of the study also fall on the syllabi of pre-service teacher training colleges/institutions. The delivery of knowledge, as far as environmental education is concerned, is not upto the mark and not producing environmentally literate teachers. In such scenarios, it is very less likely that the future generation will care for our natural environments.
LIMITATIONS OF THE PRESENT STUDY

There have been limitations also in carrying out the study on “environmental awareness and attitude of pre-service and in-service elementary and secondary school teachers”, which might have implications for further research in the field of environmental education. First one was in the selection of the instrument/tool for the research, the researcher choose the tools namely “Environmental Awareness Aptitude Measure test” – (EAAM) prepared by Dr. Praveen Kumar Jha and “Environmental Pollution Attitude Scale (EPAS) by Dr. M. Rajamnaikam published by Rakhi Prakashan, Agra (India)” after doing extensive survey on validity and reliability of the test and their availability in the market. The researcher feels that there could have been better instrument but their availability as well as development of new instrument within the time frame was a big contain. Afterwards, relying on the self reported data may not sufficiently capture the pre-service and in-service elementary and secondary school teacher’s environmental literacy. It could be possible that teachers from one institution have filled the test after having discussion among themselves. Thus, the assumption that the opinions reflected in the form of answers to the questions in the test are solely of the subject (s) could be questionable. Subsequent research is needed to verify the consistency and accuracy of present finding through multiple measures and methods. Collecting qualitative data in future research might provide a broader and more comprehensive picture of these teacher’s environmental awareness and attitude towards environment. Also in the present study the teachers under different categories i.e. pre-service and in-service elementary and secondary school teachers were examined without considering their sex, their teaching
experience and educational background due to time constraints and unequal sample size under each category.

Future research efforts may be able to investigate effects of such parameters on environmental awareness and attitude towards environment of teachers of both levels. However, in the last but not least, researcher is of the opinion that the findings of present are quite important and substantive in nature to make solid foundation of for further research in this direction.