Summary, Findings And Educational Implications
CHAPTER – VII

SUMMARY, FINDINGS AND EDUCATIONAL IMPLICATIONS

Environment is an organism’s surroundings. Environment includes other plants and animals as well as non living constituents such as water, air, light, soil and temperature (Douglas and Downey, 1981).

Today the environment of the entire globe is disturbed. Population explosion, increase in depletion of physical resources, environmental pollution, exploitation of natural resources and technological growth are the factors resulting in present deterioration of the world’s environment. This is the result of man’s abuse towards environment. For fulfilling the dream of sustainable development not just for another century but for thousands of years, there is a need to learn a way of life that can be sustained. The real solution of environmental problems can be sought by educating people.

Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, and his biophysical surroundings (IUCN, 1970). Many environmental educationists and scholars (e.g. Fien, 1993; Gough, 1992; Gough, 1997) hold that environmental education should adopt a holistic, three-fold approach known as education about, in and for the environment. Education about the environment emphasizes the development of environmental awareness, knowledge, and understanding. In such an approach, ecological concepts and technical solutions to environmental problems are addressed. Education in the environment encourages outdoor activities that afford personal experience within the environment as well as child-

Outdoor education means learning in and for the outdoors. It is a means of curriculum extension and enrichment through outdoor experiences (Hammerman, 1980). The child acquires environmental knowing (also known as environmental cognition) through direct (observations, sensory stimulation, movement in the space) and indirect (education, interpersonal communication, popular media) experiences of nature. When children lived on farms, had access to neighborhood green spaces or natural backyards, these direct and indirect experiences could be made outside school. However, with the limiting of children’s environmental experiences, schools and school grounds are increasingly one of the few sites where this can happen (Fleer & Hardy, 2001).

In the present study critical thinking, social skills and responsible environmental behavior were the dependent variables.

Critical thinking is the process of purposeful, self-regulatory judgment, which drives problem-solving and decision-making (APA, 1990). Critical thinking skills are common desired outcomes and can bridge environmental education with state and national standards; when taught explicitly in the context of environmental issues, these skills can become integrated into student behavior and help to create the environmental citizenry that environmental educators envision (Ernst & Monroe, 2006).

Social Skills are interpersonal behaviours that assist individuals in maximizing reinforcement in an interpersonal context and in minimizing social punishment and negative feedback (Deffenbacher, 2001). Research suggests that the possession of good social skills is linked with academic success, and happiness in school, as well as a more emotionally stable adult life.
One of the ultimate goals of environmental education is to form an environmentally literate citizenry who can actively participate in solving environmental problems. Such actions are termed "responsible environmental behaviour" (REB) or "environmental action" (Hungerford and Peyton, 1976). Dimensions of REB are knowledge of ecological concepts, knowledge of environmental issues and problems, locus of control, environmental attitude, beliefs and values related to the environment, environmental sensitivity, personal responsibility, environmental action strategies, and intention to act.

Intelligence was selected as a classifying variable in the present study. It is a capacity of an individual to understand the environment and the resourcefulness to cope with its challenges of environment. Intelligent behavior consists of purposively adopting to, selecting and shaping one's environment and that both culture and personality play significant roles in such behavior (Sternberg, 1985).

7.1 NEED OF THE STUDY

Today's environmental problems arise from the lifestyles humans lead. As a result of those lifestyles, public health has been endangered, and there has been a loss of ecological balance. Therefore, learning to respect nature and understanding how to coexist with and care for the environment are essential parts of lifelong learning tasks everyone must henceforward face. One of the most fundamental aspects in this process of lifelong learning is environmental education in schools (Rao, 1996).

Each of us needs an understanding that decisions we each make can affect our environment. Complex global environmental problems must be understood by policy makers as they make decisions on topics that concern us all. An environmentally informed citizenry is an urgent need as headlines confront us with issues of global warming, ozone depletion, and the effects of pollutants on
health. Environmental education attempts to develop an environmentally literate citizenry that can compete in our global economy. It has the skills, knowledge, and inclinations to make well-informed choices, and it exercises the rights and responsibilities of members of a community (Sorensen, 2005).

The lives of children today are much more structured, supervised and scheduled with few opportunities to explore and interact with the natural outdoor environment. Children’s physical boundaries have shrunk. Childhood and regular unsupervised play in the outdoor natural world are no longer synonymous (Francis, 1991; Pyle, 1993 & 2002; Moore & Wong, 1997; Kellert, 2002; Kuo, 2003; Brooks, 2004; Kytta, 2004). Today, most children live what one play authority has referred to as a childhood of imprisonment (Francis, 1991). Children are disconnected from the natural world outside their doors. Louv (2005) calls children’s condition today nature-deficit disorder.

The vast majority of previous research in the field of environmental education is in the traditional classroom setup. Lectures, excessive moralizing, externally derived codes of ethics and teachers as authoritarian figures have not worked in bringing about ethical or behavioural change in students.

Intelligence is a general factor that runs through all types of performance. It is the capacity to learn or to profit by experience so the investigator felt that was need to study the effectiveness of environmental education programs on students of different intelligence levels.

So, the investigator proposed to study the effectiveness of outdoor environmental education programs for enhancing critical thinking, social skills and responsible environmental behaviour among fifth grade students. Intelligence was studied at three levels high, average, and low.
7.2 STATEMENT OF THE PROBLEM

“EFFECTIVENESS OF OUTDOOR ENVIRONMENTAL EDUCATION PROGRAM FOR ENHANCING CRITICAL THINKING, SOCIAL SKILLS AND RESPONSIBLE ENVIRONMENTAL BEHAVIOUR AMONG FIFTH GRADE STUDENTS”.

7.3 OBJECTIVES OF THE STUDY

- To develop outdoor environmental education program for class V students in environmental studies (EVS).
- To compare the effectiveness of outdoor environmental education program and traditional instruction for enhancing critical thinking among students with high, average, and low intelligence.
- To compare the effectiveness of outdoor environmental education program and traditional instruction for enhancing social skills among students with high, average, and low intelligence.
- To compare the effectiveness of outdoor environmental education program and traditional instruction for enhancing responsible environmental behaviour among students with high, average, and low intelligence.
- To study the relationship between critical thinking and social skills of class V students.
- To study the relationship between critical thinking and responsible environmental behaviour of class V students.
- To study the relationship between social skills and responsible environmental behaviour of class V students.
7.4 HYPOTHESES

7.4.1 HYPOTHESES RELATED TO MEAN GAIN SCORES ON CRITICAL THINKING

H₁ The two instructional treatments yield equal mean gain scores on critical thinking of the students.

H₂ There is no significant difference in mean gain scores on critical thinking of the students with high, average and low intelligence.

H₃ There is no significant interaction between instructional treatment and intelligence with regard to critical thinking of the students.

7.4.2 HYPOTHESES RELATED TO MEAN GAIN SCORES ON SOCIAL SKILLS AND ITS DIMENSIONS

H₄ The two instructional treatments yield equal mean gain scores on social skills of the students.

The two instructional treatments yield equal mean gain scores with respect to

H₄.1 Dimension I viz., Concern for others
H₄.2 Dimension II viz., Interpersonal skills
H₄.3 Dimension III viz., Friendship skills
H₄.4 Dimension IV viz., Diplomatic skills

H₅ There is no significant difference in mean gain scores on social skills of the students with high, average and low intelligence.

There is no significant difference in mean gain scores of the students with high, average and low intelligence with respect to

H₅.1 Dimension I viz., Concern for others
H₅.2 Dimension II viz., Interpersonal skills
H₅.3 Dimension III viz., Friendship skills
H₅.4 Dimension IV viz., Diplomatic skills
H6 There is no significant interaction between instructional treatment and intelligence with regard to social skills of the students.

There is no significant interaction between instructional treatment and intelligence of the students with respect to

H6.1 Dimension I viz., Concern for others
H6.2 Dimension II viz., Interpersonal skills
H6.3 Dimension III viz., Friendship skills
H6.4 Dimension IV viz., Diplomatic skills

7.4.3 HYPOTHESES RELATED TO MEAN GAIN SCORES ON RESPONSIBLE ENVIRONMENTAL BEHAVIOUR AND ITS DIMENSIONS

H7 The two instructional treatments yield equal mean gain scores on responsible environmental behaviour of the students.

The two instructional treatments yield equal mean gain scores with respect to

H7.1 Dimension I viz., Knowledge of ecological concepts
H7.2 Dimension II viz., Knowledge of environmental issues and problems
H7.3 Dimension III viz., Locus of control
H7.4 Dimension IV viz., Environmental attitude
H7.5 Dimension V viz., Beliefs and values related to the environment
H7.6 Dimension VI viz., Environmental sensitivity
H7.7 Dimension VII viz., Personal responsibility
H7.8 Dimension VIII viz., Environmental action strategies
H7.9 Dimension IX viz., Intention to act
Summary, Findings and Educational Implications

H₈ There is no significant difference in mean gain scores on responsible environmental behaviour of the students with high, average and low intelligence.

There is no significant difference in mean gain scores of the students with high, average and low intelligence with respect to

H₈.1 Dimension I viz., Knowledge of ecological concepts
H₈.2 Dimension II viz., Knowledge of environmental issues and problems
H₈.3 Dimension III viz., Locus of control
H₈.4 Dimension IV viz., Environmental attitude
H₈.5 Dimension V viz., Beliefs and values related to the environment
H₈.6 Dimension VI viz., Environmental sensitivity
H₈.7 Dimension VII viz., Personal responsibility
H₈.8 Dimension VIII viz., Environmental action strategies
H₈.9 Dimension IX viz., Intention to act

H₉ There is no significant interaction between instructional treatment and intelligence with regard to responsible environmental behaviour of the students.

There is no significant interaction between instructional treatment and intelligence of the students with respect to

H₉.1 Dimension I viz., Knowledge of ecological concepts
H₉.2 Dimension II viz., Knowledge of environmental issues and problems
H₉.3 Dimension III viz., Locus of control
H₉.4 Dimension IV viz., Environmental attitude
H₉.5 Dimension V viz., Beliefs and values related to the environment
H₉.6 Dimension VI viz., Environmental sensitivity
H₉.7 Dimension VII viz., Personal responsibility
H₉.8 Dimension VIII viz., Environmental action strategies
H₉.9 Dimension IX viz., Intention to act
7.4.4 HYPOTHESES RELATED TO RELATIONSHIP AMONG CRITICAL THINKING, SOCIAL SKILLS, AND RESPONSIBLE ENVIRONMENTAL BEHAVIOUR OF CLASS V STUDENTS

H$_{10}$ There exists no significant relationship between critical thinking and social skills of class V students.

H$_{11}$ There exists no significant relationship between critical thinking and responsible environmental behaviour of class V students.

H$_{12}$ There exists no significant relationship between social skills and responsible environmental behaviour of class V students.

7.5 DELIMITATIONS

1. The study was conducted on class V students of environmental studies.
2. Students were taught topics of environmental studies from their syllabus.
3. The experiment was limited to about 50 working days of the academic session.
4. The study was limited to class V students of two schools of Gurdaspur (Punjab).

7.6 THE SAMPLE

The sample in present study was purposive in nature. Firstly, principals of various schools of Gurdaspur were approached by the investigators. After obtaining permission from two schools Little Flower Convent School, Gurdaspur and HRA International School, Gurdaspur. Intelligence test (Coloured Progressive Matrices, 1995) was administered to 300 students of two schools. In accordance with the manual students were divided into three groups, High Intelligence, Average Intelligence and Low Intelligence. Students which lie at or above the 75$^{th}$ percentile were placed in high intelligence group, students which lie between the 25$^{th}$ and 75$^{th}$ percentile were placed in
average intelligence group, and students which lie at or below 25th percentile were placed in low intelligence group.

Thus, 28 students with High Intelligence, 28 students with Low Intelligence and 64 students with Average Intelligence were selected. Each of three groups of students were randomly allocated to two sub groups i.e. experimental and control group. So, the final sample comprised of 120 students.

7.7 DESIGN OF THE STUDY

There were different sets of dependent variables. The first 2x3 factorial design was computed by ANOVA for the means gain scores on critical thinking. Here, instructional treatment and intelligence were the independent variables. Gain on critical thinking scores was the dependent variable which was calculated as the differences in post test scores and pre test scores for each subject. The variable of instructional treatment was studied at two levels namely experimental group (T1) which was taught by outdoor environmental education and control group (T2) which was taught by traditional learning methods. The variable intelligence was studied at three levels viz High (I1), Average (I2), and Low (I3) levels.

Second, 2x3 factorial designs were employed for analyzing scores on gains in social skills. The two independent variables were instructional treatment and intelligence. Instructional treatment was studied at two levels viz (T1) outdoor environmental education and (T2) traditional method of learning. Intelligence was studied at three levels High (I1), Average (I2), and Low (I3) levels.

Finally, 2x3 factorial design was employed for mean gain scores on Responsible Environmental Behavior. The two independent variables were instructional treatment and intelligence. Instructional treatment was studied at two levels viz. outdoor environmental education and traditional method of learning and intelligence was studied at three levels High, Average, and Low levels.
7.8 THE TOOLS USED
For the present investigation following tools were used
1) Instructional material for implementing Outdoor Environmental Education (Developed by investigator).
4) Responsible Environmental Behaviour Test (Developed by investigator).
All of these tools have been discussed in Chapter IV

7.9 PROCEDURE
Procedure of the experiment comprised two main stages which are: Selection of the sample and conducting the experiment.

STAGE I : SELECTION OF THE SAMPLE
The present study was conducted on 120 students of class V from Little Flower Convent School, Gurdaspur and HRA International School, Gurdaspur. After administrating intelligence test to 300 students, students were selected and allocated to 3 groups viz. High Intelligence, Average Intelligence. and Low Intelligence. Each of three groups of students were randomly allocated to two sub groups i.e. experimental and control group. So, the final sample comprised of 120 students. The investigator contacted many experts in the field of environmental education for the validation of the tools.

STAGE II : CONDUCTING THE EXPERIMENT
The experiment was conducted in three phases as given below:
Phase I: Administration of the pre test

This phase involved the administration of the following tests to students of the experimental group and control group i.e. viz

- Critical thinking test
- Social skills rating scale (Filled by the class teacher)
- Responsible environmental behaviour test

Phase II: Conducting the Instructional Program

Students of experimental group were exposed to outdoor environmental education program for 50 days. Students learnt EVS by different outdoor activities like field trips, visit to factory, dance on pollution, environmental rally, fancy dress show, poster making competition, planting samplings, cleaning the school campus etc. The students of control group were taught similar topics by traditional method of instruction by the investigator herself.

Phase III: Administration of the post test

Immediately after the instructional treatment of 50 days was over, the subjects were assessed by administering the following tests to the students of both the experimental and control groups.

- Critical thinking test
- Social skills rating scale (Filled by the class teacher)
- Responsible environmental behaviour test

7.10 STATISTICAL TECHNIQUES

To analyse the data following statistical techniques were employed.

- Description statistical techniques like mean, SD’s of critical thinking, social skills and responsible environmental behavior scores.
7.11.1 FINDINGS PERTAINING TO MEAN GAIN SCORES ON CRITICAL THINKING

• Students taught environmental education by the outdoor environmental education program exhibited better mean gains on critical thinking as compared to students of control group who were taught environmental education by traditional method of instruction.

• Students with high intelligence exhibited significantly higher mean gain scores on critical thinking than students with low and average intelligence.

• There was significant interaction between treatment and level of intelligence in relation to critical thinking scores.
• Students of high intelligence exhibited better mean gains in critical thinking than students of average intelligence when taught by outdoor environmental education programme.
• Students of high intelligence exhibited better mean gains in critical thinking than students of low intelligence when taught by outdoor environmental education programme.
• Students of high intelligence taught by outdoor environmental education programme exhibited better mean gains in critical thinking than students of high intelligence taught by traditional method of instruction.
• Students of high intelligence taught by outdoor environmental education programme exhibited better mean gains in critical thinking than students of average intelligence taught by traditional method of instruction.
• Students of high intelligence taught by outdoor environmental education programme exhibited better critical thinking than students of low intelligence taught by traditional method of instruction.
• Students of average intelligence taught by outdoor environmental education programme and students of low intelligence taught by traditional method of instruction exhibited comparable mean gains in critical thinking.
• Students of average intelligence taught by outdoor environmental education programme exhibited better mean gains in critical thinking than students of high intelligence taught by traditional method of instruction.
• Students of average intelligence taught by outdoor environmental education programme and their counterparts taught by traditional method of instruction exhibited comparable mean gains in critical thinking.
• Students of average intelligence taught by outdoor environmental education programme and students of low
intelligence taught by traditional method of instruction exhibited comparable mean gains in critical thinking.

- Students of low intelligence taught by outdoor environmental education programme exhibited better mean gains in critical thinking than students of high intelligence taught by traditional method of instruction.

- Students of low intelligence taught by outdoor environmental education programme and students of average intelligence taught by traditional method of instruction exhibited comparable mean gains in critical thinking.

- Students of low intelligence taught by outdoor environmental education programme and students of low intelligence taught by traditional method of instruction exhibited comparable mean gains in critical thinking.

- Students of high intelligence exhibited better mean gains in critical thinking than students of average intelligence when taught by traditional method of instruction.

- Students of high intelligence exhibited better mean gains in critical thinking than students of low intelligence when taught by traditional method of instruction.

- Students of average intelligence and low intelligence taught by traditional method of instruction exhibited comparable mean gains in critical thinking.

### 7.11.2 FINDINGS PERTAINING TO MEAN GAIN SCORES ON SOCIAL SKILLS

- Students taught environmental education by the outdoor environmental education program exhibited better mean gains on social skills, and its dimensions, interpersonal skills and friendship skills but equal mean gain scores on concern for others and diplomatic skills as compared to students of control
group who were taught environmental education by traditional method of instruction.

- Students with high, average and low intelligence exhibited comparable mean gains on social skills and its dimensions, concern for others, interpersonal skills, friendship skills and diplomatic skills.
- There was no significant interaction between treatment and level of intelligence in relation to mean gains on social skills and its dimensions, concern for others, interpersonal skills, friendship skills and diplomatic skills.

### 7.11.3 FINDINGS PERTAINING TO MEAN GAIN SCORES ON RESPONSIBLE ENVIRONMENTAL BEHAVIOUR

- Students taught environmental education by the outdoor environmental education program exhibited better mean gains on responsible environmental behaviour and its dimensions viz., knowledge of ecological concepts, knowledge of environmental issues and problems, locus of control, environmental attitude, beliefs and values related to the environment, environmental sensitivity, personal responsibility, environmental action strategies, and intention to act as compared to students of control group who were taught environmental education by traditional method of instruction.
- Students with high, average and low intelligence exhibited comparable mean gains on responsible environmental behaviour and its dimensions, locus of control, environmental attitude, beliefs and values related to the environment, environmental sensitivity, personal responsibility, environmental action strategies, and intention to act.
- Students of high intelligence exhibited better mean gains on knowledge of ecological concepts and knowledge of
environmental issues and problems and than students with low and average intelligence.

- Students of average intelligence group exhibited better mean gains on knowledge of environmental issues and problems as compared to students of lower intelligence.

- There was no significant interaction between treatment and levels of intelligence in relation to mean gains on responsible environmental behaviour, knowledge of environmental issues and problems, locus of control, environmental attitude, beliefs and values related to the environment, environmental sensitivity, personal responsibility, environmental action strategies, and intention to act.

- There was significant interaction between treatment and levels of intelligence in relation to mean gains on knowledge of ecological concepts.

- Students of high intelligence exhibited better mean gains in knowledge of ecological concepts than students of average intelligence when taught by outdoor environmental education programme.

- Students of high intelligence exhibited better mean gains in knowledge of ecological concepts than students of low intelligence when taught by outdoor environmental education programme.

- Students of high intelligence taught by outdoor environmental education programme exhibited better mean gains in knowledge of ecological concepts than students of high intelligence taught by traditional method of instruction.

- Students of high intelligence taught by outdoor environmental education programme exhibited better mean gains in knowledge of ecological concepts than students of average intelligence taught by traditional method of instruction.
Summary, Findings and Educational Implications

- Students of high intelligence taught by outdoor environmental education programme exhibited better mean gains in knowledge of ecological concepts than students of low intelligence taught by traditional method of instruction.
- Students of average intelligence taught by outdoor environmental education programme exhibited better mean gains in knowledge of ecological concepts than students of low intelligence taught by traditional method of instruction.
- Students of average intelligence taught by outdoor environmental education programme exhibited better mean gains in knowledge of ecological concepts than students of high intelligence taught by traditional method of instruction.
- Students of average intelligence taught by outdoor environmental education programme exhibited better mean gains in knowledge of ecological concepts than their counterparts taught by traditional method of instruction.
- Students of average intelligence taught by outdoor environmental education programme and students of low intelligence taught by traditional method of instruction exhibited comparable mean gains in knowledge of ecological concepts.
- Students of low intelligence taught by outdoor environmental education programme and students of high intelligence taught by traditional method of instruction exhibited comparable mean gains in knowledge of ecological concepts.
- Students of low intelligence and those of average intelligence when taught by traditional method of instruction and exhibited comparable mean gains in knowledge of ecological concepts.
- Students of low intelligence taught by outdoor environmental education programme and their counterparts taught by traditional method of instruction exhibited comparable mean gains in knowledge of ecological concepts.
Summary, Findings and Educational Implications

- Students of high intelligence and students of average intelligence when taught by traditional method of instruction exhibited comparable mean gains in knowledge of ecological concepts.
- Students of high intelligence and low intelligence taught by traditional method of instruction exhibited comparable mean gains in knowledge of ecological concepts.
- Students of average intelligence exhibited better mean gains in knowledge of ecological concepts than students of low intelligence when taught by traditional method of instruction.

7.11.4 FINDINGS PERTAINING TO RELATIONSHIP AMONG CRITICAL THINKING, SOCIAL SKILLS, AND RESPONSIBLE ENVIRONMENTAL BEHAVIOUR OF CLASS V STUDENTS

- Critical thinking was found to be positively correlated to social skills. With increase in critical thinking, social skills of class V students also increase and vice versa.
- Critical thinking was found to be positively correlated to responsible environmental behaviour. Increase in critical thinking increases the responsible environmental behaviour of class V students and vice versa.
- A positive correlation was found to be between social skills and responsible environmental behaviour. As there is increase in social skills of class V students, responsible environmental behaviour increases and vice versa.

7.12 EDUCATIONAL IMPLICATIONS

In the present study, it was found that teaching environmental education by outdoor program enhanced critical thinking, social skills and responsible environmental behavior of class V students. So, we teachers should use outdoor programs to teach...
environmental education especially to the primary classes because children have an innate, genetically predisposed tendency to explore and bond with the natural world and they must be given developmentally appropriate opportunities to learn about the natural world.

- Environmental education should reach all citizens, bring about a closer link between educational processes and human life, and look outward to the community.
- The way children learn is completely different than adults. To be effective, children’s environmental education needs to be designed to match children’s developmental needs, interests, abilities and learning styles.
- Young children are active learners. Their best learning occurs with hands-on, interactive play and self-discovery rather than on trying to impart knowledge to them.
- The single most important factor in developing personal concern for the environment was positive experiences in the outdoors during childhood.
- Young children have a natural curiosity that requires direct sensory experience rather than conceptual generalization. To be effective and engage children based upon their developmental abilities and ways of learning, their hands-on sensory experiences need to be immersive and open-ended rather than structured and scripted.
- Children’s experiences during early childhood should nurture the conception of the child as a part of nature. It is during early childhood when children’s experiences give form to the values, attitudes, and basic orientation toward the world that they will carry with them throughout.
- Regular positive interactions within nature allow children to feel comfortable in it, develop empathy with it and grow to love it.
Summary, Findings and Educational Implications

- There is a need to allow children to develop their biophilia, their love for the Earth, before we ask them to academically learn about nature and become guardians of it.
- Children’s exposure to relationships with animals needs to be cultivated with live animal contact and animal-based stories, songs and other experiences. Developing an emotional connectiveness—empathy—to the natural world is the essential foundation for the later stages of environmental education.
- If children’s natural attraction to nature is not given opportunities to flourish during their early years, they may develop an aversion to nature i.e. biophobia.
- Informal environmental education plays an important role in building environmental literacy of the whole population because it can reach various population groups and offer varied opportunities for action upon the environment.
- It is suggested that informal education could provide some sort of intervening function for the maintenance and reinforcement of the knowledge and skills people learned through school and serve as part of life-long learning.
- Since environmental issues are often complicated, informal education could provide varied opportunities and educational resources to help people gain and reinforce appropriate environmental literacy.
- The cooperation of formal and informal environmental education could present an appropriate sociological context (e.g. social pressure, behavior interventions such as reward and penalty, cooperation of others) in which individuals can gain reinforcement for environmental action. For example, a community recycling programme would maximize the opportunities for success if it is supported by the teachers, school administration, community leadership groups,
environmental organisations, local government and other informal environmental education institutions.

- If the development of environmental sensitivity is the desired objective, for instance, the national parks could cooperate with local environmental organizations and volunteers to provide some activities in pristine settings. Students could be released in very small groups in nearby park areas for two or three hours, frequently throughout their school careers.

- Some field trips could also be provided so that participants can experience severe environmental problems or degradation in their local community.

- It is suggested that both formal and informal environmental education should be effectively tapped. By doing so, environmental educators could establish a close link between education and community life and then gain the participation of a larger portion of the whole population.

- It is also suggested that cooperative relationships between formal and informal institutions and environmental organizations could be established so that the educational and institutional resources can be shared in promoting peoples' environmental literacy.

- The best learning environments are informal and naturalistic outdoor nature-scapes where children have unmediated opportunities for adventure and self-initiated play, exploration and discovery. Such informal experiences stimulate genuine interest in and valuing of environmental knowledge that is provided in more structured environmental education programs.

- A large percentage of the population lives in poverty, with few options to choose environmentally appropriate lifestyles. Others are in position to make environmentally sensitive decisions but do not do so, partly because of lack of awareness. So, we need to make people aware about environment through education.
Summary, Findings and Educational Implications

- When the syllabus on environmental education for children at different stages of school education are finalized, different spots for the essential field visits as educational excursion can be identified and listed comprehensively.
- The more personal children’s experience with nature, the more environmentally concerned and active children are likely to become.
- Environmental education promotes the use of higher-order thinking skills, encourages informal experiences in school as well as outdoors and brings together children and adults in order to make a contribution to the environment.
- A primary objective in teaching students to think critically is for students to learn to use these skills beyond the classroom.
- With the rapid increase of available knowledge, educators are realizing that the goal of improving critical thinking is fundamental to schooling, as increasingly complex societal challenges call for an improvement in the thinking skills used by decision-makers and citizens in their daily affairs.
- The ability to think critically is essential if individuals are to live, work, and function effectively in our current and changing society.
- Playgrounds can provide children rich educational opportunities, particularly in the area of social skills and environmental learning.
- Possession of good social skills is linked with academic success, and happiness in school, as well as a more emotionally stable adult life.
- According to research, attaining social skills early in a child’s school career plays an important role in later academic and vocational success.
- Children who have strong social skills, are more likely to be accepted by peers, develop friendships, maintain stronger
relationships with parents and peers, be viewed as effective problem solvers, cultivate greater interest in school, and perform better academically.

- Environmental Education is the subject for everyone. The earlier one starts, the better are the results.

### 7.13 SUGGESTIONS FOR FURTHER RESEARCH

- Research may be conducted to study the effect of outdoor environmental education on other important variables such as problem solving, self efficacy, self-esteem, self-awareness, leadership and conflict resolution ability.
- The present study was confined to teaching environmental education. Similar investigation can be conducted to determine the effectiveness of outdoor education for teaching of other subjects like science and social studies.
- A similar research may be conducted for students of higher classes.
- Effectiveness of outdoor learning may be researched for disabled students or students with special needs.
- The present study may be replicated on a large population for greater validation of results.
- Intergenerational approach can be used for teaching environmental education outdoors where parents and other family members are also involved.
- Other recommendations for future research include a longitudinal study, to examine the long-term impacts of participation in outdoor school for students.