1.1 General:

A tradition of didactic science teaching is strongly entrenched in many parts of the world. The influence of traditional curricula and examinations is so pervasive that many teachers feel constrained to teach only those facts and concepts which appear to be directly relevant to examination success.

In almost all the educational institutions in our country, the information from the printed text is poured into young minds by traditional spoon-feeding methods. From this type of education, knowledge may be acquired but all round development cannot take place. The feeling of dissatisfaction with the present system of education has been expressed time and again by educationists as well as by the general public. The quality of education is to be ultimately reflected through the behaviour of learners. The focus of teaching-learning process should be shifted from teacher-centered to student-centered, keeping in view the individual differences.

Teaching is an art as well as a science. As an art, it portrays the imaginative and artistic abilities of the teacher in creating a worthwhile situation in the classroom in which the learners learn and achieve the specific objectives and general aims of education. Teaching as a science points to the logical, mechanical and procedural steps to be followed to attain an effective accomplishment of goals.

To encourage our students to think more deeply and independently, we need to consider a variety of teaching strategies. This obviously raises further problems such as the time available for such strategies, the apparent challenge to the role of the teacher, and the need for preparation of effective resource material for both teachers and students.

Learning takes place when the learners achieve what the teacher perceives as essentials to be achieved while a course or a unit of a course is taught in the classroom or outside it. In order to know if learning has actually taken place, the teachers should be clear about what they perceive as
essential and how they expect the student to learn. In other words, the objectives of teaching must be specifically defined so that the teachers keep those as a frame of reference to find out if learning has taken place and if so whether their teaching has been effective. It implies, therefore, that effectiveness of teaching is the outcome of adopting appropriate teaching techniques to help students achieve these objectives and of an appropriate evaluation to find out if learning has taken place. It follows that instructional objectives, teaching strategies and evaluation are the three salient features of effective teaching which indicate effective learning.

Environmental education in the last two and a half decades has become a worldwide movement. It may be largely due to the fast changing environmental scenario, peoples’ growing concern and urgency of educating them about their environment and its problems, thereby enabling them to contribute to environmental protection and improvement. In turn, these factors have emerged from the pressures of environmental degradation and need for environmental protection and the educational experiences in relation to these issues the world over.

South Asian countries like Bangladesh, Bhutan, Nepal, Pakistan, Sri Lanka and India face an uncertain environmental future. There are shortages of land, water, forests and productive fisheries combined with pollution, diseases and increasing social, economic, environmental and political problems. There is also a lack of a qualified pool of professionals to address these problems in tune with the rapid changes which are taking place in the region. Specifically, the South Asia region has seen the following socio-economic and environmental problems:

- More than half of the world’s poor live in South Asia. There is an enormous unfulfilled human potential in the region. Rapid environment degradation, illiteracy, malnourishment and infant mortality are very high, while access to health services, safe water and sanitation, and information and communication services are limited.
- Gender inequity and its cultural acceptance are endemic. Not only does this inequity threaten the very survival of women and girls, it also deprives South Asia of the talents of more than half its population. The
region accounts for 40% of the world’s maternal deaths and has the world’s worst sex ratio.

- With 22% of the population living on only 3% of the world’s land, the region is facing serious environmental crisis. A large proportion of the population does not have access to safe drinking water, ground water depletion is widespread, and the contamination of ground water has affected the health of millions of people.

The efforts at the national level and major interaction through international conferences at Stockholm (1972), Tbilisi (1977) and Rio (1992) has put environmental education on a firm footing. In fact, environmental education has become an ongoing pursuit with educators in formal and non-formal education. Environmental education, whether formal or non-formal, has mostly relied on resource materials developed for classroom teaching (Jerath and Saxena, 2001).

The role of teacher of environmental education is to bring about awareness of the problems of environment. This is not an easy task. The contents to be learnt and the maturity of the learners vary in degree while learning itself has varied aspects and can take place through many avenues. Appropriate teaching strategies are of immense importance in bringing about required modification in student behaviour and his/her learning styles. Thus, if teachers really want to help learners to become academically successful, they would have to first examine them more closely and then develop alternative learning packages. The learners may not all learn things in the same ways or at the same speed, or with the same facility and completeness. Modularization can be seen as a mechanism by which an appropriate degree of flexibility can be designed into the curriculum. In recent years the concept of modular instruction has been seized upon by some as a solution to the apparent inflexibility of the diverse needs of individual learners.

A module represents a way of planning in which the whole curriculum or classroom instructional programmes are divided into some meaningful units called “The Modular Units”. Thus, a module stands for a subsystem of the curriculum or instructional programme. However, as a subsystem irrespective
Thus, a self-learning module is one type of instructional material with which a learner can acquire knowledge, skills and attitudes in the absence of a teacher. It differs from other types of instructional materials. It is self-contained and independent of live instructions (Meyer, 1984).

Human beings need social acceptance to survive, and are capable of altruism. These two factors make environmental solutions possible (Holmes, 1990). Altruism is a term formed by Auguste Comte in 1851, on the Italian adjective altrui, and employed by him to denote the benevolent, as contrasted with the selfish propensities. Though used primarily, in a psychological sense, to designate emotions of a reflective kind, the immediate consequences of which are beneficial to others, its important significance is ethical. Altruism by definition, is the placing of higher value on all but oneself. It is the principle or practice of unselfish concern for the welfare of others. The underlying philosophical doctrine is: that right action is that which produces the greatest benefits to others.

Altruism is found to have an immediate link with empathy. In fact empathy is found to be the root of altruism. Empathy is one of the dimensions of a much broader term or concept known as ‘emotional intelligence’ (Goleman, 1995).

Typically, “emotional intelligence” is defined in terms of emotional empathy, attention to, and discrimination of, one’s emotions and accurate recognition of one’s own and others’ moods. It also includes mood management or control over emotions, response with appropriate (adaptive) emotions and behaviours in various life situations, especially to stress. It involves balancing of honest expression against the requirements of courtesy and consideration, and respect for others (i.e., possession of good, social skills and communication skills).

Thus, emotional intelligence is the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand
emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth.

The study of effectiveness of self-learning modules in environmental education in relation to altruism and emotional intelligence was undertaken in terms of achievement.

Academic achievement, despite many statements about the aim of education has always been a crucial point and the centre of educational research. The academic development of an individual continues to be the primary concern and the most important goal of education. Academic achievement generally refers to the degree of success or that of proficiency attained in some specific area concerning scholastic or academic work. It is the knowledge gained and competence actually shown by the pupils in the subjects in which they have received instructions at school. It encourages the students to work hard and learn more. Also, it helps the teachers to know whether their teaching methods are effective or not and help them to effect improvements accordingly. Thus, academic achievement helps both the teachers and the students to know where they stand. In this context, achievement assumes the important function of monitoring the progressive stages of development of the child and to indicate the effectiveness of the training system.

1.2 Rationale of the Study:

The world today is confronted with problems of a deteriorating environment, increasing poverty and population, illiteracy and a continuing degradation of the global life support systems. The hope of a better and safer future for mankind lies in the integration of environment and development concerns. In this direction, environmental education empowers people to take wise decisions and appropriate action. As such, environmental education deserves to be the pivotal issue for the agenda of policy makers at all levels – the global, the regional and the national. Environmental problems pose a challenge to humanity, which are unprecedented in their scope and complexity. Achieving a viable balance between environmental protection and sustainable development will require fundamental changes in the dynamics
and contents of our socio-economic life and behaviour. In response, educational curricula need to be so designed that perception and protection of environment should become second nature to children. It is only when they grow up to be responsible citizens that they would effectively respond to environmental issues.

Now the question arises: what motivates people to demand higher environmental quality? Do desires for an improved environment come merely from self-interest, or do altruistic motives play a role as well? It has been found that altruistic motives do influence the improvement of environment (Holmes, 1990). Altruism or altruistic motives and emotional intelligence seem to play a vital role in decisions regarding environmental quality. It helps to determine how an individual’s utility function should be defined. Pursuing environmental objectives for altruistic reasons is consistent with the concept of maximization of utility if the utility function is defined so that utility is a function of the welfare of others. If altruistic motives do exist for protecting the environment, methods that attempt to place a value on natural resources must take these motives into account. Furthermore, even if the present generation does express concern for future generations, we must ask whether such altruistic concerns are effectively articulated and taught among the students. Students can play a vital role in making all other sections of the society environmentally conscious. If school and college curricula and programmes were adapted towards ensuring greater appreciation, better protection and a more responsible utilization of the environment is possible. If we want to survive on earth, we will have to learn to live, work and exist in greater harmony with the environment. Educating students towards this end is of utmost importance. If it were the adults of the past and present who have been responsible for bringing about the deterioration of the environment, it makes sense to tackle the problem by educating the younger generations to become more conscious of and concerned about the environment.

Very little research has been done in the field of self-learning modules in environmental education to determine their effectiveness at the college level, as revealed by the study of related literature. The traditional, didactic teaching methods (teacher instruction, use of text-books etc.), are likely to
prove ineffective in promoting attitudinal change, and it is suggested that less conventional approaches involving positive participation by the students may be more appropriate. Thus, a need was felt to develop self-learning modules in environmental education. Being an incipient area, the development of teaching-learning materials is of crucial significance to it.

1.3 Statement of the Problem:
Effect of Self-Learning Modules on Achievement in Environmental Education in relation to Altruism and Emotional Intelligence.

1.4 Objectives of the Study:
1. To develop self-learning modules in environmental education for first year college students.
2. To develop a standardised test on emotional intelligence.
3. To develop a standardised achievement test based on self-learning modules in environmental education.
4. To study the relative effectiveness of self-learning modules in environmental education as compared to the conventional method of instruction on achievement.
5. To know whether the students having differential altruism differ in achievement.
6. To study whether the students having differential emotional intelligence differ in achievement.
7. To find if there is any interaction between strategies of teaching and altruism of students.
8. To find if there is any interaction between strategies of teaching and emotional intelligence of students.
9. To study the interactional effects of strategies of teaching, altruism and emotional intelligence on achievement.

1.5 Hypotheses:
The present study aims to seek experimental verification for the following hypotheses in the context of achievement in environmental education:
1. There is no significant difference in the mean achievement scores in respect of groups taught through self-learning modules and conventional method of instruction in environmental education.

2. There is no significant differences between mean scores of students having different levels of altruism.

3. Emotional intelligence does not significantly account for differential achievement in environmental education.

4. There is no first order significant interaction between strategies of teaching and altruism.

5. There is no first order significant interaction between strategies of teaching and emotional intelligence.

6. Strategies of teaching, altruism and emotional intelligence will not account for total variance.

1.6 Delimitations:

1. The population of the present study was limited to a sample of 140 first year college students of B.Com in a college of Union Territory, Chandigarh.

2. The self-learning modules were prepared on only some of the important topics of environmental education.