CHAPTER I

INTRODUCTION AND CONCEPTUAL FRAMEWORK

“Intelligence is not to make no mistakes, but quickly to see how to make them good”

- Bertolt Brecht (1898-1956).

1.1 INTRODUCTION

Education is a process of human engineering that aims at man-making right from infancy to death in imbibing the knowledge, skill and attitude that nurtures the demands gradually to blossom the cognitive embedded potentials into actual, the affective soothers into maturity and psycho-motor abilities into application to meet the individual and social demands and make life meaningful and worth living in tune with the constituent innate and external self of individuals that differs from person to person. In this social process, the child needs support to free itself from economic constraints and hence it consumes a long period of social support network to emerge self-reliant, though no individual could ever be a parasite, instead be a creeper to stand on its own. He/she must pay back by realizing the goals and objectives that education sets to his/her optimal capacity sincerely and honestly as Mittal (2006) reflects, “Education must focus on total and optimal development of human resources”.

1.2 EDUCATION

According to Aristotle “Education is the creation of a sound mind in a sound body. It is to develop man’s faculties, especially his mind so that he may be able to enjoy the contemplation of the supreme truth, goodness and beauty in which perfect happiness essentially consists” (Dhiman, 2007). Human life has got two aspects biological aspect and sociological aspect. While the former is maintained and transmitted by food and reproduction, the latter is preserved and transmitted by
education. It is on this unquestionable ground of need, education is considered an important social activity and every individual that aspires to be a member of a society invests in the venture of education evened the costs paid for it on multi grounds is dearth.

1.2.1 Meaning and Definition of Education

Education is like a diamond that appears in different colours, when it is seen from different angles. Just as reproduction and nutrition are basic to biological evolution, education is basic to civilization and to social survival. Education of man does not begin at school, it begins at birth. It ends not when he graduates from the university but at his death. Education is a lifelong process. Any modification brought about in the behaviour of an individual as a result of his interaction with the environment constitutes learning. The concept of education is dynamic. It has passed through many ages and stages in the process of evolution and at every stage it has had a different meaning according to the existing social level and this process will never come to an end. Emerging society will always demand a revision of the prevailing education ideas.

“Education is the manifestation of perfection already existing in man’, says Vivekananda.

“Education is a means of enabling the child to find out the ultimate truth, making truth of its own and giving expression to it”, says Rabindranath Tagore.

1.3 HIGHER SECONDARY EDUCATION

Higher secondary education occupies a very prominent place in deciding the future of our education. It provides the link between the secondary and higher education. Moreover, majority of the students completing higher secondary education either goes for higher education including professional courses or enter the society to make a living.
Now-a-days, for promoting educational development in the country, a uniform pattern of educational structure is followed. In this pattern, 10 years of general education is followed by the diversified higher secondary education of 2 years, and then 3 years of university education.

1.3.1 Objectives of Higher Secondary Education

Bhatia (2007), view ‘Higher secondary education means the education that comes after the 10th standard’. Higher secondary stage of education is an integral part of school education and it stage is characterized by diversification into academic and vocational streams.

According to Aggarwal (1985), the following are the objectives of higher secondary education:

i) It promotes value such as common cultural heritage, egalitarianism including scientific temper, democracy and secularism.

ii) It promotes equality and international co-operation.

iii) It facilitates inter-regional mobility by providing equal access to everyone.

iv) It contributes to national development by imparting specialized knowledge and skills.

v) It reflects on the critical, socio-economic, cultural, moral and spiritual of better-equipped citizens.

vi) It promotes more learning, higher maturity and help in the development of better equipped citizens.

vii) It helps student to develop a realistic self-concept.

viii) It orients pupils to the world of work and helps them in making educational and vocational choices and

ix) It helps the students for personal adjustments.
1.4 SCOPE AND IMPORTANCE OF BIOLOGY

In order to define Biology, the meaning of science will have to be understood. ‘Science is systematic study of the facts and discovery of reason of a happening’. Lamark and Treviranus were two scientist of 1802AD, who the name ‘Biology’ to the systematic study about the creatures/ living things

Biology is formed by the synthesis of two Greek words ‘Bios’ and ‘Logos’. ‘Bios’ means ‘Life’ and ‘Logos’ is discourse or ‘study’. Thus, Biology is also known as science of life. The advent of Biology took place when man came in contact with the forests. He /She was dependent for his/her living on the plant and animals. For diseases and wounds, he/she dependent on herbs and for food on animal and plants (Kulshrestha, 2006).

The knowledge of Biology is useful to know about the Morphology, Cytology, Physiology and Reproduction of living organisms. It helps us to know the ecological relationships and evolution of organisms on this earth. The knowledge of Biology also helps in understanding the biochemical processes and the metabolic reactions occurring in the living cells.

Biologists study many different facts of life from the molecules that make up individual, add to the behaviour and ecology of animals and plants. Their studies encompass both basic and applied science because today’s Biologists play an increasingly important role in the progress of Agriculture, Human and Animal health and in Industry whether, in the laboratory, in the office, or in the field to meet the daily challenges of preserving our environment, developing new defences against diseases, increasing agricultural productivity, and expanding our understanding of the basic processes of life. There is an increasing need for biological scientist to meet these challenges (Choudhary 2011).
The knowledge of Biological Science is a backbone of development of human race. Biological science helps in understanding the origin of the life on earth. Venugopal and Nithyasri (2005) point out the following importance of Biology.

i) It helps in development of appreciation of nature and its environs.
ii) It helps man to value the existence of other living organisms on earth.
iii) It develops discipline and orderliness in individual’s life.
iv) It develops the power of observation and critical thinking and trains in problem solving.
v) It develops scientific attitude and scientific methodology.
vi) It correlates the knowledge of other subjects with life of the individual.
vii) It develops open mindedness and truthfulness and prepares the individual to lead a modern lifestyle.
viii) It helps the individuals to apply the important concepts like nutrition, health, natural resources and pollutions for betterment of his/her existence.
ix) It helps the individual to play a fruitful role in a society as responsible citizens of society.

1.4.1 Need and Objectives of Teaching Biology

The objectives should be determined before teaching of Biology. If do not have the clear objectives of a subject, teachers may get deviated from the path. Teachers will not be sure what are supposed to teach? How will the students be benefited by studying Biology? What possible changes will occur in them? Which chapter should be taught in what detail? Thus, it is very essential that every teacher should predetermine the objectives of his/her subject. Prior to fixing any objectives, the following issues should be kept in mind:
i) The objectives should be set according to the needs and interests of the students.

ii) They should be in accordance with the intellectual level and status of the students.

iii) The objectives should be related to the entire syllabus of the class.

iv) The objectives should help in achieving the aims of democratic education.

v) The objectives should help in bringing about the desired changes in the behaviour of the learner.

vi) The objectives should be helpful in evaluation of the progress of the learner.

vii) The objectives should be helpful in selection and proper utilization of the teaching-aids.

viii) The objectives should work as a guide in helping students to gain real, true and practical knowledge.

ix) The objectives should be affordable, within the achievement level and in accordance with our means and requisites.

1.5 ADOLESCENCE

‘Adolescence’ is a period of swift growth and development in an individual. It is a period of development from the onset of puberty to the attainment of adulthood, beginning with the appearance of secondary sexual characteristics, usually between 11 and 13 years of age, continuing through the teenage years, terminating at the maturity, usually at the age of 18 (Colman Andrew, 2009). Rapid development happens in all the internal and external organs of the body almost to the maximum. Bones, muscles and nerves grow faster and the glands secrete to the faster causing quicker physiological changes. Maximum growth in height is reached. Emotional instability will be there. The period of stress and strain comes in the way. He wants to
analyze the world. Moral development reaches the peak. ‘Adolescence is a recapitulation of the earlier period of life, views Ross (2002) and ‘it is a period which comprises of stress and strain; storm and strife’ judges Stanley Hall (1916).

Utmost care has to be given to adolescent period since it is critical stage in one’s life. He/she wants to reason and agree. He/she questions what, why and where for everything. He/she keeps himself/herself to be objective and scientific in his/her behaviour. He/she is interested to study nature and express the experience he earned. Hence all scientists, poets and philosophers emulate during this period only, if they are guided in a proper way.

a) Physical development

The gradual growth of the physiological system accelerates and reaches its culmination leading to the full potential of the psycho-motor system of the body that is marked primarily by the development of muscles, nervous system and digestive system; height and weight that constitutes the physical structure grow to the extent possible.

The general appearance of male and female undergoes a massive change and it appears visibly. In boys, beards and the mustache begins to grow faster contrary to the faster development of breasts and pelvic region in girls. Apart from this, hair appears on the arm-pit and pubic region. The voice patterns of the boys become rough whereas voices of the girls become soft and meek. Menstruation period causes weariness and deep concern to the girls. Girls become weak and experiences fatigue. Release of sperm in boys leads to horror and leads to wet-dreams. The teenage becomes nervous and unsteady owing to the result of these somatic variations or sudden physical changes in the structure of the body.
b) Mental development

In this stage the factors pertaining to mental development like sensation, perception, realization, imagination, memory, association, disassociation, comparison, contrast, generalization, problem solving, and decision making ability. Intelligence, if flourished to the core during this period, one can find a remarkable growth in the critical power of observation, logical reasoning and imagination.

c) Emotional development

Adolescence is a period of joy and happiness since it is between the childhood and adulthood period. He/she will be moody. These are the two sides of behaviour. He may laugh at one time, but at the same time he sheds tears. Hence, highest emotional instability is seen in this period. He/she is eagerly interested in the opposite sex.

The physical somatic variations or physiological changes cause proper notice to the adolescent teenagers. Hence, it is a period of leveling all emotions like anxiety, fear, anger, sorrow and joy.

d) Social development

Though ego-centric, an adolescent he/she desires to adjust to social norms and practices. He/she desires to follow the dictates of the group. It is at this stage, the feelings dominate over reason.

e) Moral development

An adolescent always dreams for creation of an ideal society. He/she talks about God, Heaven, the meaning of life, and the question of death. He/she has an aim to serve society, and particularly to the disables and old age groups.

1.6 THE TRUE MEANING OF INTELLIGENCE

Intelligence is most widely studied in human beings, but has also been observed in animals and plants. Intelligence has been defined in different ways. It
includes the abilities to think abstract, understand, communicate, reason, learn, plan and solve problems (Bash, 2005).

1.6.1 Definition of Intelligence

Intelligence is the capacity to do something useful in the society in which live. It is the ability to respond successfully to new situations and the capacity to learn from one’s past experiences. It is a concept that has been understood in different ways by different psychologists and has, therefore, a wide variety of definitions. It is the power of good responses from the point of view of truth of fact” defines Thorndike (1914). An individual is an intelligent in the proportion that he/she is able to carry on abstract thinking” defines Terman (1921). It is the ability to adapt to one’s surroundings, delimits Jean Piaget (1952).

1.6.2 Types of Intelligence

Some psychologists, notably Thorndike believe that several kinds of intelligence should be distinguished from each other. According to him intelligence is of three kinds:

1. Social intelligence: It refers to the knack of getting along with people. Socially intelligent person makes friends easily and understands human relations.

2. Mechanical intelligence: It is the ability to deal effectively with machines or mechanical contrivances.

3. Abstract intelligence: It is the ability to deal with symbols (both verbal and numerical), diagrams, formula and so on. Nagarajan (2009).

1.7 MULTIPLE INTELLIGENCE

The IQ testing concept comes to one’s mind, when he/she thinks of intelligence. Intelligence is often defined as intellectual potential; something a child is born with; something that can be measured and a capacity. However, the emerging views on theories of intelligence of the recent times, contradicts some of the
postulants and convictions of the earlier theories. One such conception is the theory of multiple intelligences proposed by Harvard psychologist Howard Gardner.

This theory suggests that traditional psychometric views on intelligence are too limited. Gardner first outlined his theory in his book ‘Frames of Mind: The Theory of Multiple Intelligences’ (1983), where he suggested that all people have different kinds of intelligences. Gardner proposed that there are eight intelligences, and has suggested the possible addition of a ninth known as "existentialist intelligence".

In order to capture the full range of abilities and talents that people possess, Gardner suggests that people do not have just an intellectual capacity, but have many different intelligences including musical, interpersonal, spatial-visual and linguistic intelligences.

While a person might be particularly strong in a specific area, he/she is also most likely possessing a range of abilities. For example, an individual might be strong in verbal, musical and naturalistic intelligence while he/she is found to be extremely well in musical intelligence.

Gardner’s theory has come under criticism from both psychologists and educators. These critics argue that Gardner’s definition of intelligence is too broad, and that his eight different "intelligences" simply represent talents, personality traits and abilities. Gardner’s theory also suffers from a lack of supporting empirical research

1.7.1 Gardner’s Theory of Multiple Intelligences

Howard Gardner of Harvard University has propounded a unique theory of intelligence called the “Theory of Multiple Intelligence”. Through his new theory, Gardner challenged the notion of “General Intelligence” and then questioned
Fig. 1.1 Multiple Intelligences

(Source: www.tecweb.org/styles/gardner.html)
the very basis of prevailing intelligence tests by asking how an individual’s intellectual capacities could be captured in a single measure of intelligence. Indeed, he tried to give a broad-base to the concept of intelligence and its measurement by providing a multiple frame. He asserted that human intelligence or cognitive competence can be better described as a set of an individual’s multiple abilities, talents and mental skills related to a multiple number of domains of knowledge in a particular cultural setting (Mangal, 2009). Elaborating his pluralistic view of intelligence further, he concluded that there are seven independent types of intelligences that grow and develop differently in different people, depending upon their hereditary characteristics or environmental experiences. By calling them independent, Gardner meant that each intelligence is a relatively autonomous intellectual potential which is capable of functioning independently of the others. These different types of intelligence have been named by him as linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, intrapersonal, interpersonal, naturalist, and existential intelligence.

a) Linguistic intelligence: This type of human intelligence is responsible for all kinds of linguistic competence-abilities, talents and skills, available in human beings. It can be best broken down into components like syntax, semantics and pragmatics as well as more school-oriented skills such as written or oral expression and understanding. This type of intelligence is most visible in professionals like lawyers, lecturers, writers and lyricists, and a number of other professionals exploiting linguistic intelligence.

b) Logical-mathematical intelligence: This type of intelligence is responsible for all types of abilities, talents and skills in areas related to logic and mathematics. It can be
broken down into components like deductive reasoning, inductive reasoning, scientific thinking including solving of logical puzzles, carrying out calculations and the like. Professionals like mathematicians, philosophers, physicists are found to exhibit this type of intelligence in abundance.

c) **Spatial intelligence**: This type of intelligence is concerned with the abilities, talents and skills involving the representation and manipulation of spatial configuration and relationship. Many of adults make use of this kind of intelligence in the sphere of our work. For example, painters may be seen to demonstrate spatial intelligence through their use of space when applying pigments to a canvas. This is also true of professionals like land surveyors, architects, engineers, mechanics, navigators, sculptures and chess players, who are found to rely upon the spatial intelligence in their own way.

d) **Musical intelligence**: This type of intelligence covers the abilities, talent and skills pertaining to the field of music. It may be well demonstrated through one’s capacity for pitch discrimination, sensitivity to rhythm, texture and timbre, ability to hear themes in music, and in its most integrated forms, the production of music through performance or composition. It is visible in a quite large proportion in professionals like musicians and composers.

e) **Bodily kinesthetic intelligence**: This type of intelligence is concerned with the set of abilities, talents and skills involved in using one’s body or its various parts to perform skillful and purposeful movements. A child may be seen to demonstrate such intelligence in moving expressively in response to different musical and verbal stimuli or bending different body parts in organized sports. Among professionals, dancers, athletes and surgeons may be seen to demonstrate a high degree of bodily-kinesthetic intelligence in their respective fields.
f) **Intra-personal intelligence:** This type of intelligence consists of an individual’s abilities to enable him/her to know himself/herself. It includes knowledge and understanding of one’s own cognitive strengths, styles and mental functioning, as well as one’s feelings, range of emotions and skills to utilize one’s fund of knowledge in practical situations. In brief, intrapersonal intelligence helps an individual to understand his/her own self by providing an insight into his/her total behaviour – what he/she feels, thinks or does. It is, therefore said to be the most private of the intelligences that a person possesses. On account of its secret and private nature, the access to this type of intelligence in and an individual is available only through self-expression for example, language, music, visual art and similar other forms of expression. In our practical life, this type of intelligence is demonstrated by yogis, saints and masters of Zen.

g) **Inter-personal intelligence:** The counterpart of intrapersonal intelligence in one’s cognitive structure is interpersonal intelligence. It consists of the abilities to understand individuals other than one’s self and one’s relations to others. In addition, it includes the ability to act productively, based on the understanding of others. The knowledge and understanding of others is the quality that is needed for social interactions in one’s day-to-day life. In practical life, this type of intelligence is most visible among psychotherapists, teachers, sales people, politicians, and religious leaders.

h) **Naturalistic intelligence:** It is this human ability that discriminates among living things like plants and animals, as well as sensitivity to other features of the natural world like clouds and rock. This ability was clearly of value in our evolutionary past as hunters, gatherers, and farmers. It continues to be central in such roles as botanist or chef. It is also speculated that much of our consumer society exploits the naturalist
intelligences, which can be mobilized in the discrimination among cars, sneakers, kinds of makeup, and the like.

i) Existential intelligence: Sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do die, and how did get here.

1.8 INTERPERSONAL INTELLIGENCE

Human beings are a part of society and are social animals. Hence, along with our abilities to lead a life as an individual, it is also important to be able to live and grow as a part of a group. It is important to enhance our social abilities to thrive in the society. This includes the abilities to interact with others, understand them and interpret their behaviour. Interpersonal intelligence is something all need to have but it becomes a vital factor for people in occupations that require interaction with people. Those who have to deal with people as a part of their profession need to have interpersonal intelligence. These include medical practitioners, people in sales or marketing fields and teachers.

Interpersonal intelligence relates to the concept of interaction with the people around. It is about the understanding of their thoughts and feelings and the ability to respond to them. People with an interpersonal intelligence typically fall in the group of extroverts. They are sensitive to the moods and sentiments of others. They possess the ability to cooperate with people around them and are seen as team players. They can work in a group with ease and efficiency and can understand the temperaments of others in the group.

1.8.1 Definition of Interpersonal Intelligence

“Interpersonal Intelligence, means understanding other people. It’s an ability all need, but is at a premium if you are a teacher, clinician, salesperson, or a politician. Anybody who deals with other people has to be skilled in the Interpersonal sphere”, defines Gardner (1983).
It imparts the ability to relate and understand others. These learners try to see things from other people’s point of view in order to understand how they think and feel. Generally they try to maintain peace in group settings and encourage cooperation. They use both verbal and non-verbal language in open communication channels with others.

Silberman and Freda Hansurg, (2000) moots the opinion that Interpersonal skills gifted kids enjoy the following:

i) Intuiting other's feelings
ii) Empathy practices
iii) Establishing a division of labor
iv) Person-to-person communication
v) Cooperative learning strategies
vi) Collaborative skills
vii) Receiving feedback
viii) Sensing other's motive
ix) Group projects
x) Teaching someone else something new and
xi) Learning from someone outside of school.

1.8.2 Interpersonal Skills

Interpersonal skills is a point of juncture that accommodates skills from different quarters and woes the person to see things from other perspectives, welcoming the views of others by listening to others, empathizing, understanding other people’s moods and feelings, counseling, co-operating with other groups, noticing people’s moods, motivations and intentions. Communicating both verbally
and non-verbally, building trust, peaceful conflict resolution, establishing positive relations with other people will enable an individual to be professionally successful.

Fig: 1.2 Interpersonal Skills
(Source: http://www.ereationshipcoaching.com)

1.8.3 Interpersonal Learners

Interpersonal learners are ‘people-persons’. They enjoy being around people, like talking to people, have many friends, and engage in social activities. They can develop genuine empathy for the feelings of others. They learn best by relating, sharing, and participating in cooperative group environments. The best salespeople, consultants, community organizers, counselors, and teachers have a high level of interpersonal intelligence.

1.8.4 Characteristics of Interpersonal Intelligent People

Kendra Cherry (2007) enlists the following characteristics of an individual bestowed with the gift of interpersonal intelligence.

i) Demonstrates empathy toward others.

ii) Is admired by peers.
iii) Relates well to peers and adults alike.
iv) Displays skills of leadership.
v) Works cooperatively with others.
vi) Is sensitive to the feelings of others.
vii) Acts as a mediator or counselor to others.
viii) Is good at understanding people.
ix) Good at communicating verbally.
x) Skilled nonverbal communicators.
xi) Sees situations from different perspectives.
xii) Creates positive relationships with others.
xiii) Is good at resolving conflict in groups.
xiv) Bonds with parents and interacts with others.
xv) Forms and maintains social relationships.
xvi) Perceives the feelings, thoughts, motivations, behaviour, and lifestyles of others and
xvii) Expresses an interest in interpersonally-oriented careers such as teaching, social work, counseling, management, or politics.

1.8.5 Interpersonal Intelligence Teaching Strategies

Thomas Armstrong (2009) suggests these below given strategies that could found to be effective and useful in the context of teaching among those who are at the initiation stage.

i) **Jigsaw**: Each student has a specific piece of a task, or must master one part of the content material. Then all students come together to share their pieces and make a whole concept.
ii) **Numbered Heads:** Students are in groups of four, and each student in a group has a number assigned to them. Teacher asks a question, groups confer, then teacher points to a group and calls out a number. That student answers the question.

iii) **Pairs Check:** Students work in groups of four, with 2 pairs of students in each group. Pairs work on 2 problems, where each student works on one of the two while the other acts as a coach. Once both members of the pair have completed the problems, the group reassembles to check answers.

iv) **Team-Pair-Solo:** Team works a problem to completion, and then splits into pairs. Pairs work a similar problem together. Then pairs split into solo students who individually work the same type of problem. This strategy builds confidence when attempting more difficult content material.

v) **Proactive Prioritization:** Students persuade each other to their way of thinking, using only positive statements about their choices (no negativity allowed). Each student has a turn regarding each item to be discussed until you have a consensus among classmates.

vi) **Spend a Dollar:** Students get tokens representing quarters or times and spend their tokens voting for items on a list. Students cannot spend all of their tokens on just one item or give/trade tokens.

vii) **Affirmation:** Promotes a good tone for discussions and group work. Students must offer a positive comment to another student before contributing to the task or discussion.

viii) **Paraphrasing:** Before a student can contribute to a discussion, he/she must paraphrase the student who spoke before him or her. Promotes active listening.
ix) **Carousel:** Students, as teams, rotate around the class to view group projects, complete an activity/lab, write on a specific topic, or review certain material.

x) **Blackboard Share:** As students generate ideas on a topic in groups, one member of their group may go to the board and write an important idea the group would like to share with the class. At the end of blackboard share, your blackboard will look like a brainstorm/concept map/list of important ideas about the topic.

He further suggests that Interpersonal Intelligence can be fostered by the creation of this below suggested conducive atmosphere.

i) Assign a small group of students to each classroom who are responsible for its enforcement and explanation.

ii) Provide group or peer counseling to students of interpersonal Intelligence when needed.

iii) Have a misbehaving student buddy up with a peer role model and

iv) Give students ample opportunity for social outletting, such as leading or working in groups.

**1.9 DIMENSIONS OF INTERPERSONAL INTELLIGENCE**

The following dimensions of interpersonal intelligence have been taken on the basis of the characteristics.

a) **Empathy**

Empathy means understanding the issue or concern that lies behind another’s feeling. It is the translation of the German term “einfühlung” the state of being emotionally and cognitively ‘in tune with another person, particularly by feeling what their situation is like from in the side or what it is like for them. The empathy competence gives people an awareness of other’s emotions, concerns and needs. The empathic individual can read emotional currents, picking up on non – verbal cues
such as tone of voice or facial expression. Empathy includes understanding others, leveraging diversity and political awareness.

![Fig. 1.3 Dimensions of Interpersonal Intelligence](image)

**b) Amiability**

Amiability means showing and inspiring friendliness. The people who have amiability they are good tempered in nature. They are sensing people’s developmental needs and bolstering their abilities. And also like to get involved in group activities rather than solitary. It is the ability to get along with others and negotiate relationships. Amiability includes friendliness, co-operation and conscientiousness.

**c) Social persuasion**

Social persuasion is the ability to influence other’s. They exhibit the communication, competence and effective in the given emotional information. Deal with difficult issues straight forwardly, listen well and welcome sharing information
fully, and foster open communication and stay receptive to bad news as well as good. These people are viewed as fair, pleasant, friendly, honest and patient in dealing with others. Social persuasion includes adaptability, initiative and trustworthiness.

d) Respectful behaviour

Respectful behaviour means show consideration for other people’s opinion. It is the ability to honor other’s opinions and feelings. These peoples have the capacity for understanding what others are saying and why they feel and act as they do. They possess the talent of arts of listening and not to see the layers of blame, anger and hopelessness. Respectfulness includes truthfulness developing others and building bonds.

e) Guidance

Guidance means show the way to take correct decisions or to solve the problem to know and when to take the lead and they are helping people to work for their own goals. They are able to articulate and arouse enthusiasm for a shared vision and mission step forward as needed to guide the performance of others while holding them accountable, and to lead by example. Guidance includes leadership, conflict management and relationship management (Singh, 2003).

1.10 EMOTION

Emotion is that mental condition in which a person becomes excited intensely. There are so many disturbances in the mind of the person at the time of emotion that his/her whole behaviour is turned ups and down. Emotional experience is a common experience of everybody. Emotions are related with the affective aspect of the mind. A person affected by emotion, experiences, excitement in his/her mental state. He/She feels restlessness like fire flame in his/her mind. Affective activity chiefly occurs in emotional experience. In a state of emotion a person expresses desire to achieve an objective. Emotions inspire a person to do something. If the intensity of emotion is
pleasant, the person wants to see the situation for long, and if it is unpleasant he/she wants to move away from it. Emotions like anger, fear, love and so on are important emotions (Ram shakal pandey, 2008).

According to Young (2009) “An emotion is disturbed state of organism: an emotion includes visceral changes due to increased activity of autonomic nervous system and an emotion originates within the psychological situation.” It should keep in mind that emotion is not a mental process; it is a kind of mental condition.

1.10.1 Emotion – Meaning and Definition

Etymologically the word emotion is derived from the Latin word ‘emovere’ which means ‘to stir up’ or ‘to excite’. Emotion can thus be understood as an agitated or excited state of our mind and body. Taking clue from its derivation, various psychologists have tried to define the term ‘emotion’ in their own ways. Let us reproduce a few of such definitions.

Emotion is a ‘moved’ or ‘stirred-up’ state of an organism. It is a stirred-up state of feeling that is the way it appears to the individual himself/herself. It is a disturbed muscular and glandular activity. That is the way it appears to an external observer defines Woodworth (1945). There exists a close association between the instinct and the emotion in humans and emotions of humans are controlled partially or to a certain extent either directly or indirectly as it has a substantial share in the inclusive and exhaustive development of individuals.

1.10.2 The Role of the Brain in Emotions

The brain consists of two broad divisions, namely cerebral cortex and sub-cortical centers. Both of them are involved in emotional experiences. Experiments have shown that direct stimulation of the brain by electrical sources can result in emotional experiences even without any outside sensory stimulation. This is
particularly true when areas in the temporal lobe and the limbic structures and stimulated.

The hypothalamus which is a sub cortical centre is actively involved in emotional experiences as it is responsible for the control of the sympathetic and parasympathetic systems. The hypothalamus when stimulated can create a wide variety of emotional experiences. Another sub-cortical centre, the thalamus, performs the function of relaying messages of the impulses to the cerebral cortex. Thus the thalamus, the hypothalamus and the limbic structures play a major role in arousing emotional experiences (Beena, et al. 2006).

1.10.3 Nature and Characteristics of Emotions

Mangal (2007) proposes the nature and characteristics of emotions as follows:

a) Emotional experiences are associated with some instincts or biological drives: Every emotional experience is associated with one or the other innate instinct. An emotion is aroused under the current or influence of an instinctive excitement. One can experience emotion of anger only after riding on the instinctive waves of pugnacity or combat.

b) Emotions are the product of perception: Perception of a proper stimulus be it an object or situation, is needed to start an emotional experience. The organic changes within the body, favorable or unfavorable, then, may intensify the emotional experience.

c) The core of an emotion is feeling: Every emotional experience, whatever it may be, involves feelings-a sense of response aroused in the heart. Feelings and emotions - both are experiences. There is only the difference of degrees. After perceiving a thing or a situation, feelings like pleasure or displeasure can be aroused. There may be some
intensity or degree of strength of an individual to act immediately, they are turned into emotions. Therefore, the urge to do or act is the most important emotional experience.

d) Emotions bring physiological changes: Every emotional experience involves many physical and physiological changes in the organism. Some of the changes which express themselves as overt behaviour are easily observable. For example, reddened eyes, flushed cheeks, beating of the heart, choke in the voice, or an attack on an emotion-aroused stimulus. In addition to these easily observable changes, there are internal physiological changes. Examples are changes in the circulation of blood, impact on the digestive system and changes in the functioning of some glands like adrenal glands.

e) Emotions are expressed in relation to the concrete object or situations: These changes become so specific and distinguishable in the human being that a simple glimpse can enable us to detect a particular emotional experience in an individual and can see whether he/she is in anger or, suffer from fear and so on.

   In addition to the above, emotions have some more specific characteristics in view of Aggarwal (2007) and they are as follows:

   i) Emotions are prevalent in every living organism.

   ii) They are present at all stages of development and can be aroused in young as well as in old.

   iii) Emotions are individualistic, and they differ from person to person.

   iv) Same emotion can be aroused by a number of different stimuli-objects or situations.

   v) Emotions rise abruptly but subside slowly. An emotion once aroused, tends to persist and leave behind, an emotional mood.
vi) Emotions have the quality of displacement. The anger aroused on account of one stimulus gets transferred to another situation. The anger resulting from being rebuked by the boss gets transferred to beating the children at home.

vii) One emotion can give birth to a number of similar emotions and

viii) There is a negative correlation between the upsurge of emotions and intelligence. Reasoning and sharp intellect can check sudden upsurge of emotions. Also, under emotional experiences, the reasoning and thinking powers are decreased.

1.10.4 Kinds of Emotions

Analyzing the impact of various emotional experiences on the well-being of an individual leads conclude that emotions have both positive as well as negative effects. Deciding whether an emotion will prove to be helpful or harmful to an individual depends upon the following factors:

i) The frequency and intensity of emotional experience.

ii) The situation, occasion and the nature of stimulus which arouses the emotion and

iii) The kind of emotional experience or emotions.

The last factor -the kind of emotional experience- counts much in this direction. Emotions, general, can be categorized into positive emotions and negative emotions.

Unpleasant emotions like fear, anger and jealousy which are harmful to the individual’s development are termed as negative emotions, while the pleasant emotions like affection, amusement, curiosity and happiness which are very helpful and essential for normal development, are termed as positive emotions.
By their nature of being both positive and negative, it should not be assumed that all the positive emotions are always good, and the negative emotions, bad. While weighing their impact, other factors like frequency and intensity, nature of situations and the stimuli aroused, should also be considered. Excess of everything is bad. Emotions with too much of intensity and frequency, whether positive or negative, bring harmful effects. But, the so-called negative emotions are essential for human welfare. The emotion of fear prepares an individual to face the danger ahead. The child who has no emotion of fear is sure to get affected because it has not learnt to save itself against a possible danger.

1.10.5 The Emotions of Adolescence

Adolescence has long been described as a time of emotional turmoil (Hall, 1904). In its extreme form, this view is too stereotypical because adolescents are not constantly in a state of “storm and stress”. Nonetheless, early adolescence is a time when emotional highs and lows occur more frequently (Rosenblum and Lawis, 2003). Young adolescents can be on top of the world one moment and down in the dumps the next. In many instances, the intensity of their emotions seems out of proportion to the events that elicit them (Steinberg and Levine, 1997). Young adolescents may sulk a lot, not knowing how to express their feelings adequately. With little or no provocation, they may blow up their parents or siblings, projecting their unpleasant feelings onto another person (Santrock, 2007).

1.10.6 Common Emotional Patterns in Adolescents

According to Chauhan (2007), Emotions develop out of feeling of excitement in two channels, namely delight and distress, from the early childhood and they take the form of different dominant emotions like delight and distress as love and affection, joy, pleasure and delight, worry, fear and anger and these emotions develop consequent to the inner and environmental constituents.
i) Love and Affection: The emotion of love is very important in adolescents and is related to sexual impulse. It is the result of consequences of physiological maturation. The emotion of love and affection develops from the very infancy in the life of the organism. During infancy, love and affection develop in concrete objects of his/her environment, inanimate and animate but in adolescence emotion of love and affection is associated with people and only occasionally with pets. The adolescent is able to discriminate people with whom he/she likes to associate and build up an affectionate association.

ii) Joy, Pleasure and Delight: During adolescence, physical conditions are one of the sources of joy and pleasure. The first cause of joy is one in which the individual fits, or to which, by virtue of his/her capacities and abilities, he/she is well-adjusted. The second situation which calls forth joy in the adolescent is the release of pent-up energy, the more intense the pent-up energy and the longer it has been bottled up in the individual, the stronger will be the release when it finally does take place. The third common cause of happiness in adolescent is the feeling of superiority. Every adolescent feels insecure and uncertain in life, any situation that is opposite to these feelings, gives happiness. Passing the examination in first division, being elected to students union, and being declared first in athlete, sports or contest, gives feelings of superiority to adolescents.

iii) Worry: Worry is an imaginary fear. It is caused by a repeated rehearsal of the situation feared. It is referred by some psychologists as ‘anxiety’ an emotional state in which the disturbing situation does not accompany the state, but is anticipated in the future. The adolescents have the following types of worries: 1. School work, 2. Examination and test, 3. School problems, 4. Home Worries.
iv) **Fear:** Fear is an important negative emotion. It is learned from the environment in which a child moves. Fears decrease with the advancing age of the child in number and intensity. Some categories of objects that could be the source of causing fear could be as follows:

a) Fear of material objects like snakes, dogs, strange noise, lions, elephants and airplanes

b) Establishing social relationship as in the cases like meeting with people in high offices, being with elders, being alone in a room, reciting in the class or speaking from the platform and meeting with members of opposite sex.

v) **Anger:** Anger is also a learned response to environmental stimuli. It is social in nature. Hebb while writing about the nature and source of anger and fear, says, “The fundamental source of either emotion is of the same kind, a disruption of coordinated cerebral activity. Fight and aggression are two different modes of reaction tending to restore the dynamic equilibrium, or stability, of cerebral process each of these modes of response tends to restore integrated cerebral actions.

1.11 **MATURITY**

The concept of maturity has not received a great deal of explicit attention in the literature. Delineation of libidinal development has been yielded the important formulation of the “Genital level” and “object–interest (Freud, 1924)”. Recent studies emphasis on the conflict between the regressive, dependents, versus the progressive, productive forces in the personality has directed interest toward the more detailed nature of maturity.

i) One of the most obvious pathways of development, long emphasized by Sigmund Freud and Franz Alexander, is from the parasitic dependence of the foetus to the relative independence of parent, with parental capacity for responsibility for spouse and child.
ii) Intimately bound –up with the organism’s development from parasitism on the mother to relative independence from the parents is its increased capacity for responsibility and productivity and its decreased receptive needs. Children learn to control their hostalities, their sexuality and other impulses, and to develop the orientations of maturity largely through the incentive of being loved.

iii) Third characteristic of maturity is relative freedom from the well known constellation of inferiority, egotism and competitiveness.

iv) Another aspect of maturity consists in the conditioning and the training necessary for socialization and domestication.

v) Hostile aggressiveness, using the term to include all sorts of anger, hate, cruelty and belligerency, is always a sign of emotional irritation or threat.

vi) Another important attribute of maturity is a firm sense of reality and

vii) Another characteristic of maturity is flexibility and adaptability.

1.12 EMOTIONAL MATURITY

Human beings are creatures of feelings or emotions. Our emotions control our behaviour. Emotions are one of the dimensions of personal experiences. They are expressed as love, fear, anger, laughter, tears and so on. They involve feelings of jubilation or depression. If there had been no emotions in the life of the organism, our life would have been devoid of aspiration.

According to Charles Skinner (2004), emotional maturity that is in keeping with the facts of development and potentialities involved in the process of development must stress not simply restriction and control but also the positive possibilities inherent in human nature. According to these views, emotional maturity
involves the kind of living that most richly and fully expresses what a person has in human at any level of his / her development.

According to Jersild (1957) describes, “An adequate description of emotional maturity must take account of full scope of the individuals’ capacity and powers, and of his/her ability to use and enjoy them. In its broadest sense emotional maturity means the degree to which the person has realized his/ her potential for richness of living and has developed his/her capacity to enjoy things, to relate himself/herself to others to love and to laugh, his/ her capacity for whole hearted sorrow when an occasion for grief arises, and his / her capacity to show fear when there is occasion to be frightened, without feeling a need to use a false mask of courage” (Aruna Mohan, 2006).

According to Walter D. Smitson (1974) emotional maturity is a process in which the personality is continuously striving for greater sense of emotional health, both intra –psychically and intra – personality.

1.12.1 Characteristics of an Emotionally Matured Person

Mangal (2007) opines that the below given attributes could be attributed to the persons with emotional maturity.

i) Almost all the emotions can be distinctly seen in him/her and their pattern of expression can be easily recognized.

ii) Manifestation of emotions is very much refined usually the expresses his/her emotions a socially desirable way.

iii) He/ she is able to exercise control over his/her emotions sudden inappropriate emotional out bursts are rarely found in him/her. He/she is able to hide his/her feelings and check his /her emotional hide.
iv) The person perceives things in their real perspective. He/she is not a day
dreamer and does not possess the desire to run away from realities.

v) His/her intellectual powers like thinking and reasoning are properly exercised
by him/her making any decision. He / she is guided more by his/ her intellect
than his/ her emotions.

vi) He /she does not possess the habit of rationalization. For example he/she never
argues in defence of his/her undesirable or improper conduct. Also he/she
never shifts the responsibility of his/her mistakes on others. He/she is always
honest in his/her behaviour.

vii) He /She possesses adequate self-concept and self-respect. He/ she never likes
to do thing or show such behaviour that can injure his/her self-respect and is
adverse to his / her ideals.

viii) He/she is not confined to himself. He/she thinks about others and is keen to
maintain social relationships. He /she never engages himself/ herself in such
behaviour as is antisocial and can result in social conflicts and strain his/ her
social relationships.

ix) He /She can exercise his/her emotions at a proper time in a proper place. If there
is a danger to his / her / self-prestige or if anyone is in distress, he / she can rise to
the occasion by exercising his /her emotion of anger. But if he /she commits a
mistake and is rebuked, he/she is equally able to check his/her emotion of anger.
Matured emotional behaviour is characterized by greater stability. A person
having such maturity does not sudden shift from one emotion to another.

x) He/ she is open minded enough to listen thoughtfully to the opinions of others. His
/her feelings are not easily hurt.
1.12.2 Matured Emotional Behaviour

According to Bernard (1965) following are the criteria of mature emotional behaviour:

i) Inhibition of direct expression of negative emotions.

ii) Cultivation of positive, up building emotions.

iii) Development of higher tolerance for disagreeable circumstances.

iv) Increasing satisfaction form socially approved responses.

v) Increase dependence of actions.

vi) Ability to make choice and broad about other conditions.

vii) Freedom from unreasonable fear.

viii) Understanding and actions in accordance with limitations.

ix) Awareness of the ability and achievement of others.

x) Ability to err without feeling disgraced.

xi) Ability to carry victory and prestige with grace.

xii) Ability to delay the gratification of impulses and

xiii) The enjoyment of daily living.

1.12.3 Developing Emotional Maturity

Meenakshi Sundaram (2007) suggests the following techniques to develop emotional maturity among the adolescents.

a) Acceptance and recognition: Like love and sympathy, acceptance and recognition are basic needs of child. Parents and teachers should make the children feel that they are accepted and recognized. Acceptance of love, sympathy, and recognition prevents the desired development and refinement of emotions in the individual due to which he does not attain to the normal level of emotional maturity.

b) Presenting good example: Teacher should present a good example because ‘example is better than precept’. Teacher himself should become emotionally mature.
Emotional maturity is a matter of being caught rather than taught. Children should be taught by conduction rather than by induction words do not bring much fruity. Tell them that minor misfortunes and hardships have to be accepted as part of life.

c) Games and cultural programmes: Emotional tensions are the inevitable result of man’s modern civilization and culture. They can be relieved to some extent by various kinds of games, cultural and other programmes and various opportunities for the two sexes as to communicate with each other.

d) Moral and religious training: It should be given to children because such type of training can help in improving emotional maturity.

e) Developing democratic values: In democratic societies, emotional maturity can be developed and improved upon by developing democratic values in the individual through the medium of educational institutions, family and social institutions.

1.12.4 Six Levels of Emotional Maturity

Kevin Everett Fitz Maurice (1990) identifies six levels of emotional maturity.

a) Basic emotional responsibility: When persons reaches the level of emotional maturity, they realize that they can no longer view their emotional states as the responsibility of external forces such as people, places, things, forces, fate, and spirits. They learn to drop expressions from their speech that show disownership of feelings and a helpless of victim attitude towards their feelings.

b) Emotional honesty: Emotional honesty is concerned with the willingness of the person to know and own their own feelings. This is a necessary step to self-understanding and acceptance. The issue of resistance to self-discovery is dealt with at this level. They are related solely to the person’s conscious and unconscious fears of dealing directly with the critical voices they hear inside. In the past, they have typically lost all interactions with this internal adversary, so their fears are justified.
Now, however, they know how to choose to feel so that they can keep from being destroyed, or they can choose not to interact with their accuser at all.

c) Emotional openness: This level concerns the person’s willingness and skills in sharing their feelings in an appropriate manner and at appropriate times. Persons at this level experience and learn the value of ventilating feelings, and also the dangers involved in hiding feelings from self and others. Self-disclosure is the important issue at this level of work.

d) Emotional assertiveness: The person at this level of work enters a new era of positive self-expression. The primary goal here is to be able to ask for and to receive the nurturing that one needs and wants first from self and then from others. As a secondary goal, persons should learn how to express any feeling appropriately in any situation that is without aggressive overtones. This person makes time for their feelings they prize and respect them. Such understand the connection between suppressed feelings, stress, and illness.

e) Emotional understanding: Persons on this level understand the actual cause and effect process of emotional responsibility and irresponsibility. Self-concepts are known as the problem. They realize that it is not possible to have also called good self-concept without a complimentary bad self-concept. Such experience firsthand, that because of the nature of knowledge and the formation of self-concepts, that all self-concepts contain their opposites. Knowing that though may hide one half in darkness, in a state of unconsciousness, it is still active in us; they begin to regularly leap beyond the pitfalls of self-concepts, self-images, and self-constructs.

f) Emotional detachment: At this level, the person lives without the burden and snare of self-concepts, self-images, self-constructs, and all group-concepts and thing-concepts. They are only aware of self as process, as a sensing being as an
experiencing being, as a living vessel, as unknowable and ungraspable, because it is alive and not static or fixed.

1.12.5 Factors Related to Emotional Maturity

The following factors affecting the emotional maturity are;

a) Health and physical development of an individual: There is a positive correlation between health and physical and emotional development. Children who are physically weak or who suffer from occasional illness are more emotionally upset. Any abnormal increase or decrease in the functioning of glands creates obstacles in the proper emotional development.

b) Family environment and emotional development: A cordial healthy relationship between the parents is very conducive for the emotional development of the child. The order of birth, size of the family, discipline in the family, the parental attitude towards the child (pampered, overprotected or neglected) are all important factors in the emotional development of the child.

c) School environment: The attitude of the teachers, school discipline, academic facilities available, physical facilities, methods of teaching, co-curricular activities and so on, all play a pivotal role in developing emotional maturity.

d) Peer group relationship and emotional development: The influence of the classmates and other members of the group affect emotional maturity.

e) Intelligence and emotional development: Meltzer (1937) as quoted by Hurlock (1981) has observed, “There is less emotional control on an average, among the children of lower intellectual level, than among children of the same group who are bright. An intelligent person, with his/her thinking and reasoning powers, is in a better position to exercise control over his/her emotions.”
f) Neighborhood, community and society’s environmental influence and emotional development: The child lives in the society and inherits so many traits of his/her emotional behaviour from the surrounding.

1.13 ACHIEVEMENT TEST

Achievement refers to what a person has acquired or achieved after being imparted specific training or instruction. In other words, learning outcomes or end products are the name of achievement. Aptitude test is conducted prior to training or instruction and achievement test is conducted after the training or instruction. Achievement test is constructed to measure the effects or efficiency of the specific programme of instruction or training (Anastasi, 1968).

Thus, the performance of a person on an achievement test indicates his/her performance under known and controlled conditions because this performance is the end product of specific training or instruction given to him/her in a specific field and it can be evaluated by oral written achievement tests. The achievement of students are first quantified with the help of the responses given by them and then this quantitative data are converted into qualitative ones by assessing grades or by comparing them with the criterion measure or by comparing them the objectives formulated prior to training or instruction. Finally, the results of the examinees are declined for the purpose of giving feedback to teachers, students and guardians.

1.13.1 Objectives of Achievement Test

The objective of achievement test is to measure acquired knowledge, skill, capacity and ability of an individual. According to Bhatnagar (2005) the main objectives of achievement test are as follows:

i) To evaluate the curricular and co-curricular achievement of the students.

ii) To evaluate the teaching skills of the students.
iii) To classify the students according to their abilities.

iv) To motivate the students for further studies on the basis of marks obtained.

v) To change the curriculum on the basis of data obtained.

vi) To assess the success of methods of teaching.

vii) To achieve educational objectives on the basis of tests.

viii) To give promotion to the students.

ix) To manage teaching on the basis of individual differences and

x) To help in problem solving.

1.13.2 Factors Affecting Achievement

Based on the research, Stephen (1997) shows the following variables that contribute to academic achievement of the pupils.

i) Pupil related variables, such as gender, age, intelligence, anxiety, values, interest, and aptitude.

ii) Teachers related variables, such as gender, age, in-service training undergone, use of work books, maintenance of discipline, test administration, quizzes, holding certificate to teach that subject.

iii) Family background variables, such as family size, socio- economic status, number of siblings, provision of facilities, parent child relationship, parental aspiration, parent’s occupation, parent’s education, encourage for institution, freedom and so on.

iv) Teaching related variables, such as method of teaching medium of instruction, use of teaching aids, influence of mothers tongue in teaching.

v) School climate variables, such as class size, co-educational or single sex school, curriculum, nature of management, syllabus admission policy and

v) Peer groups related variables.
1.14 NEED AND SIGNIFICANCE OF THE STUDY

Man is a social animal and hence he/she is bound to live and grow as a member of a group and lead a life as an individual with his/her abilities. It is important to enhance our social abilities to thrive in the society. This includes the abilities to interact with others, understand and interpret their behaviour. It is true that those who have strong interpersonal intelligence are good in understanding and interacting with other people. These individuals are skilled at assessing the emotions, motivations, desires and intentions of those around them. Interpersonal intelligence is how to relate with other people. Absolutely, it about understands the people, working closely with the people, cooperating and conveying to the people and what are trying to say in a way they understand. They possess the ability to cooperate with people around them and are seen as team players. They learn by working with others and take interest in discussions. Thus, people with an interpersonal intelligence become effective communicators. For instance, students with interpersonal intelligence, direct interaction, discussions with others and team efforts are the best pathways to help them to learn. So they learn their subjects very effectively. Individuals with a strong Interpersonal Intelligence can be utilized as leaders during group experiments and collaborative assignments of any kind, these students will excel in this position. If the Biology students have done their Biology experiments in the Biology Laboratory with strong interpersonal intelligence, they had the ability to perform very well in biology theory examination as well as practical examination.

Emotionally matured individuals generally evaluate, handle, control, and use emotions quickly. This is done more or less automatically. Those less mature often are inefficient, slow to analyze and often do not use their emotions constructively. This results in, among other things, depleted self-motivation. Motivated, achieving individuals have a close match between their intellectual age and their emotional maturity. Emotional maturity is a significant predictor of the level of success that an
individual will achieve in their life time and the ability to assess a relationship or situation and to act according to what is best for oneself and for the other person. Emotional development has substantially lagged intellectual development and usually is even behind chronological development. Emotional development tends to be a flow, the speed of which sometimes varies between individuals as well as within a particular individual. In order to help unmotivated individual towards motivation and positive emotional growth and to assist them toward becoming achievement oriented, the focus needs to be on emotional development. By themselves, external approaches, such as study skills, time management training, reward and punishment, and adult lecturing, will have minimal effect until emotional maturity. There are several sociological, psychological factors, which influence individuals. Of which, Emotional maturity and interpersonal intelligence play vital role in an individual development and achievement. Having this background in mind the investigator pursues this study.

1.15 CONCLUSION

The dissertation is prepared in the five chapters. The first chapter deals the introduction and conceptual framework of the variables, need for interpersonal intelligence, Emotional maturity and achievement of biology students, significance of the study, objectives of the study and delimitation of the study. The review of the related studied discussed in the second chapter. The third chapter gives details about methodology followed, the sample selected, the tool used and the statistical technique applied. The analysis of the data, interpretation of the tables and conclusion drawn discussed in the fourth chapter. The last chapter as well as the fifth summaries the whole matter. The recommendations as the educational implications and suggestions for research are also given in the fifth chapter. The books referred are listed and given under Bibliography. The tools used in this study are given in the appendices. The ensuring chapter deals with review of related studies.