CHAPTER I
INTRODUCTION

1.1 Introduction

“It is science alone that can solve the problems of hunger and poverty, of insanitation and malnutrition, of illiteracy and obscurantism of superstition and deadening customs, of rigid traditions and blind beliefs, of vast resources going to waste of a rich country inhabited by starving millions.” These words of India’s first Prime Minister Jawaharlal Nehru, while delivering the convocation address of Allahabad University in 1946, indicate the importance of science in human life.

The word science originates from the Latin word ‘scientia’ meaning to know. Academic Press Dictionary of Science & Technology (1992) defines science as ‘the systematic observation of natural events and conditions in order to discover facts about them and to formulate laws and principles based on these facts.

Thus Science is considered in its three-fold nature- a systematic body of knowledge, a way of thinking and way of investing. It is a product as well as a process. In both of these forms Science has been included in the curriculum at all levels.

The reasons why Science has been included in the curriculum are as follows

1. It provides training in observation and reasoning.
2. It provides training in scientific method of thinking.
3. It helps to know and understand the nature of non-living and living world including ourselves.
4. It inculcates spirit of inquiry.
5. It helps to develop a scientific attitude of mind which is key to prosperity and peace.
Dr. D. S. Kothari (Chairman of Education Commission-1964-66) in his Shri Raj Krishen Memorial Lecture delivered at Delhi on October 11, 1977 said, “The great reality of our age is science. The understanding of nature which science provides, and the deep harmony it unfolds, are deeply satisfying to the human mind. The power of science to transform society is immense, perhaps more than of any other activity…..”.

Science is looked at as a transforming force leading to a prosperous society. The major agency through which Science is spread is Education.

**Science Education in India**

Almost all the commissions on Education which were held after independence emphasize the important place of Science in school curriculum. The National Policy on Education (1986) indentified 10 core areas for the school curriculum one of them was ‘Inculcation of scientific temper.’

The Policy stated as follows

1. Science education will be strengthened so as to develop in the child well defined abilities and values, such as spirit of inquiry, creativity, objectivity, the courage to question and an aesthetic sensitivity.

2. Science education programmes will be designed to enable the learner to acquire problem solving and decision making skill and to discover relationships of science with health, agriculture, industry and other aspects of daily life. Every effort will be made to extend science education to the vast members who have remained outside of formal education.

This paragraph indicates the objectives of Science Education. Science Education is expected not only to impart knowledge of facts and principles but, also to develop scientific attitude of mind.

As per the guidelines of NCERT, ‘Schools should give much greater emphasis on co-curricular and extra-curricular elements aimed at stimulating investigative ability, inventiveness and creativity, even if these elements are not part of the external examination system. An ongoing movement along the lines of the Children’s Science Congress held with great success at present.
Gradually, such a movement should spread to the every corner of India and enter across South Asia, creating a wave of creativity and scientific temper among the young and their teachers.’ (NCF-2005, NCERT, P.44)

Thus Science Education is expected to be viewed with a much broader perspective than before. The first thing is that we have to think beyond the examinations. Second we have to cross the walls of our classrooms and the third, development of scientific attitude should be the major goal of Science Education.

This study deals with Scientific Attitude Development Programme, therefore it is necessary to discuss about attitude and scientific attitude.

**Attitude**

An attitude is a favorable or unfavorable evaluation of something. Attitudes are generally positive or negative views of a person, place, thing or event. This is often referred to as the attitude towards object.

An attitude can be defined as, “a positive or negative evaluation of people, objects, events, activities, ideas or just about anything in your environment.” (Zimbardo etal 1999) In the opinion of Bain (1927), an attitude is “the relatively stable overt behavior of a person which affects his status.”

North (1932) has defined attitude as “the totality of those states that lead to or point towards some particular activity of the organism. The attitude is, therefore the dynamic element in human behavior, the motive for activity.”

**Characteristics of Attitude**

From different definitions of attitude following common characteristics can be derived

1. Attitudes have a subject – object relationship.
   Attitude always involve the relation of an individual with specific objects, persons, group’s institutions and values or norms related to his environment.

2. Attitudes are learned. They are not innate and inherent in an individual.

3. Attitudes are re-actively enduring states of readiness.
4. Attitudes have motivational affective characteristics.
Attitudes have definite motivational characteristics. Other dispositions like habit of writing with right hands do not have any motivational or affective quality, but attitude towards one’s family, nation, religion or other soared and holly institutions have definite motivational affective characteristics.

5. Attitudes are as numerous and varied as the stimuli to which they respond.

One may have a number of attitudes depending upon the number of stimuli to which he/she responds. Attitude is an implicit response; therefore it stands to be varied with the number and variety of the response which the individual makes.

6. Attitudes range from strongly positive to strongly negative

Attitudes involve direction as well as magnitude. When a person shows some tendency to approach an object, he is said to have positive attitude towards it but when he shows tendency to avoid the object, his attitude is described as negative. This positive or negative attitude may involve intense feeling and vary from the large negative values to increasingly positive.

**Formation of Attitudes**

Attitudes are learned or acquired dispositions. How are they formed, has been a question for investigation to the psychologists. Based upon the opinion of Allport, Stanger who have suggested that attitudes are formed under one of the following four conditions.

1. Integration of experiences
The accumulation and integration of a number of related experiences about an object gives birth to an attitude towards that object.
2. Differentiation of experiences

When new experiences are acquired, they are differentiated or segregated from the already acquired experiences. This segregation or differentiation may tend to make certain attitudes more specific.

3. Trauma of dramatic experience

Attitudes are formed with greater speed and intensity on account of sudden unusual, shocking and painful experience.

4. Adaptation of the available attitudes

A large number of attitudes are acquired in a readymade fashion by simply following suggestions or examples of friends, teachers, parents or adopting the mores and traditions of the community or society.

Some theories of Formation of Attitudes

1. Balance theory

Proposed by Fritz Heider, it is based on the premise that people try to maintain consistency in their attitudes. If an attitude inconsistency occurs, such as believing all old people to be senile but meeting an older person who is intelligent and mentally active, the person who holds the attitude tries to reestablish consistency either by changing the attitude or changing the perception of the older person as intelligent.

2. Reactance Theory

The theory contends that attitude or changing the perception of the older person as intelligent people react. The extent of reaction is related to a person’s perception of the relative importance of the behavior. If a behavior, although restricted, is not considered important, there is little reaction. If, however, the activity is considered important and the restriction unjust, then the restriction itself makes the activity even more attractive.

3. Cognitive Dissonance Theory

Developed by Leon Fastener states that an unpleasant physiological state often exists when two cognitions are incompatible with one another. The
incompatibility creates tensions, which a person tries to release. e.g. students who advocates honesty but who does cheat on an examination must either after her or his self concept or rationalize the cheating behavior to reduce tension.

4. **Self-Perception Theory**

Introduced by Daryl Bem proposes that people infer their attitudes on the basis of observing their own behavior. A usually honest student who does cheat on an exam may infer the attitude from the behavior by thinking, “Being first is more important than honesty to me”, or “I believe that the end justifies the means”.

**Attitude Change**

Attitude change may occur through the use of persuasion, the process of intentionally attempting to alter an attitude. Persuasion includes variations in the source (origin of the message), the message (information transmitted) and the receiver of the message. Persuasion is likely to be more effective if an individual likes rather than dislikes the source and if the source is viewed as trustworthy and credible. The manner in which the message is presented as well as the characteristics of the receiver affect the ease of attitude change.

**Scientific Attitude**

As discussed earlier, one of the major aims of science education is the development of scientific attitude among its learners. Therefore, it is imperative for science teachers and educators to understand the meaning of scientific attitude.

**Definitions of scientific attitude**

A scientific attitude is linking with an ardent curiosity, fertile, imagination and love of experimental enquiry.

*John Dewey (1984)*

A scientific attitude is more than dispassionate objective, unbiased devotion to collection and treatment of the facts. A scientific attitude is based on complexity of elements.

*Young (1984)*
A scientific attitude means the ability to raise significant questions and to formulate fruitful hypothesis.

**Allyn A. Young (1984)**

A scientific attitude rests upon one and only one fundamental article of faith, faith in the universality of cause and effect.

**A. B. Wolfe (1984)**

From these definitions it is clear that Scientific Attitude is a set of different components.

Those components are given below.

**Components of Scientific Attitude**

- Spirit of curiosity
- Skepticism – not taking things for granted, asking the prior question
- Faith in the possibilities of solving the problems
- Desire for experimental verification
- Precision
- A linking for new things
- Belief in cause and effect relationship
- Belief in the theory of evidence
- Open mindedness
- Willingness to change opinion
- Humility
- Loyalty to truth
- An objective outlook
- Not to believe on superstitions
- Respect for scientific experiments
- Desire for completeness of knowledge
- Suspended judgment
- Critical thinking
- Judgment of what is fundamental and of general significance
- Impartial and unbiased judgment
• Freedom from superstitions and prejudices
• Honesty and truthfulness in recording and collecting scientific data.

**Importance of Developing Scientific Attitude among the School Students**

When Albert Einstein (1879–1955) says ‘Science without religion is lame and religion without science is blind’, he points towards the scientific attitude function of Science. Scientific attitude, as the term indicates, is an attitude having scientific base.

It leads to logical, systematic and planned actions regarding anything in life. It minimizes the risks and challenges due to biased, subjective & partial outlook. Especially in developing countries like India, where there are so many problems like population explosion, unemployment, addictions, disputes in religious and other matters, dowry system, child marriages etc. inculcation of scientific attitude is very much essential. If the scientific attitude is inculcated at school age, the person will get the habit of thinking logically from the childhood and therefore he will be able to clearly understand the nature of the world including himself. He will be able to solve his problems as well as the problems of the society by using scientific method. Thus the development of scientific attitude among the school students will contribute to develop a prosperous and peaceful society.

**Nature of some components of scientific attitude related to this research**

1. **Critical Thinking**

   Critical thinking means the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered from or generated by observation, experience, reflection, reasoning or communication as a guide to belief and action.

   Critical thinking is based on concept and principles rather than a step by step procedure. It doesn’t assure that one will be able to find the truth or can arrive to an accurate conclusion. At first one should not have all the relevant information. In other words, one is ignorant about the information which is
necessary to arrive at a conclusion. Further, one may make unjustified inferences because of the use of inappropriate concepts, failure to observe important implications and usage of inequitable point of view.

Critical thinking is useful in those situations where human beings need to solve problems, make decisions or decide in a reasonable and reflective way what to believe or what to do.

Success in human life is associated to success in learning. Simultaneously every phase in the learning process is also associated to critical thinking. Thus reading, writing, speaking and listening can do critically or uncritically. Critical thinking is necessary to become an apparent reader and a substantial writer. Most generally it can be expressed as “critical thinking is a way of taking up the problems of life.”

The person who has critical thinking ability –
raises the right questions clearly and accurately.
focus on the real problem or decision to be taken.
gathers and assesses relevant information.
develops well reasoned conclusions and solutions, testing them against relevant criteria and standards.
relies on open mindedness.
communicates effectively with others in finding solutions to complex problems.

Thus critical thinking ability is the basis of scientific attitude.

2. **Open Mindedness**

Open mindedness is an attribute of personality that involves a willingness to take relevant evidence and argument into account in forming or revising our beliefs and values, especially when there is some reason why such evidence and argument might be resisted by the individual in question. Open mindedness is worth striving because it entails being prepared to take appropriate step towards arriving at reasonable and acceptable conclusions. An open minded attitude is an indication of sincerity and good faith.
John Dewey recognizes open mindedness as a fundamental intellectual virtue and reminds us that the criterion of educational success lies in the quality of the mental processes that are promoted. It was clear to Dewey that open mindedness is not at all a matter of uncritically entertaining and adopting new ideas. For Dewey, open mindedness is an active and alert investigation of ideas that involves critical listening and careful attention. An open minded person is frank, likes to take part in discussion, likes to mingle in society and is able to admit his own mistakes. These features make him a broad minded person.

3. **To be ready to change the decision**

Decision making can be regarded as a mental process resulting in the selection of a course of action among several alternative scenarios. Every decision making process generates some final suggestion. The output can be an action or an opinion of suggestion.

While making a good decision a person must be concerned about the positive and negative aspect of each option and should consider all the alternatives. For effective decision making a person must be able to predict the effect of each option. All these factors can determine which option is appropriate for that particular situation.

An individual has to take certain decisions while solving different problems in life. Sometimes these decisions may become wrong because of some changes in the circumstances. Some times a second thought on decision also shows some inadequacy in the data of that particular decision is based. In such cases the individual may willing to change the decision in order to avoid difficulties in the future.

4. **To be Curious.**

Curiosity is defined as the positive emotional – motivational system oriented towards the recognition, pursuit, and self – regulation of novel and challenging information and experience.

Curiosity is a strong desire to learn more about anything in the world. Curious people have an ongoing, intrinsic interest in both their inner
experience and the world around them. Curious people tend to be attracted to new people, new things, and new experiences, and they are rarely bored. Being curious allows a person to approach the world in a more positive manner. It includes learning more about other people, places, events, objects and even own identity. Reflection, pondering one’s action, thoughts and feelings are the elements of curiosity.

Curious people are often considered good listeners and conversationalists. They always ask questions and search for answers of their own. Their mind always remains in an active state. Curiosity is associated with intelligence and problem-solving ability. These abilities make the mind stronger. Simply, curious brains are active brains, and active brains become smart brains. Curious people tend to bring fun and novelty into relationships. When an individual is curious about anything, then that person’s mind assumes and anticipates new ideas related to it.

Simply, “curiosity means a tendency to wonder, to inquire or to investigate, frequently expressed in exploratory or manipulative activities”.

5. **Not to believe in superstitions.**

Superstition is a belief or a practice that is not based on facts or events that can be proven. It is mainly a belief or practice resulting from ignorance or fear of something unknown or mysterious. Superstitions are mainly based on the faith in magic, witchcraft and some invisible forces like spirits and demons.

Thus Superstitions are irrational beliefs. A person believing in superstitions is always haunted by unknown fears and anxieties. He loses self-confidence.

The world today is governed by science. Science has contributed a lot in minimizing the superstitions. Education is one factor that can wipe out superstitions to some extent. A scientific outlook and temper should be cultivated to eradicate superstitions. A person with scientific attitude doesn’t believe in weird things. He needs evidence to believe in anything.
6. **To suspend the judgment until the suitable support is obtained**

Judgment helps us to make thousands of decisions daily. Our judgment is based on our previous experiences and knowledge. Many times, new ideas don’t fit into existing schemes of thought so the danger is that judgment occurs too fast when a new idea is launched.

For the proper judgment or conclusion under any circumstances, related supportive evidence must be found. The process of critical thinking is involved here in searching for the support and evaluation of the same. The judgment which is not based on suitable support or based on unsuitable or insufficient support may be wrong.

7. **To be intellectually honest**

Intellectual honesty is defined as “the behavior according to the directions given by one’s own powers of reasoning, judging, comprehending and understanding for refusal to lie, steal or decide in any way”. Intellectual honesty is an applied method of problem solving in academic world characterized by an unbiased, honest attitude, which can be demonstrated in a number of different ways, including but not limited to:

- One's personal beliefs do not interfere with the pursuit of truth;
- Relevant facts and information are not purposefully omitted even when such things may contradict one's hypothesis.
- Facts are presented in an unbiased manner, and not twisted to give misleading impressions or to support one view over another.

Intellectual honesty is fundamentally important for the development and acquisition of knowledge. It demands the appreciation of others contribution and is a higher standard than mere honesty. It is associated with critical thinking.

8. **Seeking to adopt different planned procedures in solving the problem.**

Problem solving is one of the most essential skills in life. Solving problem includes analytical and creative skills. It is considered as the one of the
most complex intellectual process. Problem solving has been defined as “a higher order cognitive process that requires the modulation and control of more routine or fundamental skills.”

Problem solving processes are distinct depending on the nature of the problem and the involvement of people in the problem. When an individual is faced by a problem first of all he has to identify the problem. Secondly, he should think on different solutions and then select a most appropriate solution and solve the problem. So a person having scientific attitude assumes many different ways for solving a problem and select the appropriate one. A person should solve the problem by constructing a systematic plan regarding the problem and should apply it for solving the problem.

9. **To have respect for scientific experiments.**

An experiment is an orderly procedure carried out with the goal of verifying, refuting, or establishing the validity of a hypothesis. Experiments vary greatly in their goal and scale, but always rely on repeatable procedure and logical analysis of the results. Scientific experiments are the test or procedures which are carried out under controlled conditions to make a discovery. In scientific experiments the facts and principles are developed through the collection, interpretation and verification of the data. An individual having scientific attitude search for evidence, which can be obtained by performing scientific experiments. In other words scientific attitude helps an individual to develop interest in scientific experiments and respect them.

1.2 **Statement of the Problem**

Programme for Development of Scientific Attitude among School Students – A Study

1.3 **Definitions of the Terms**

1. **Scientific Attitude**

Conceptual definition

A set of emotionally toned ideas about science and scientific method and related directly or indirectly to a course of action, in the
literature of science education. The term implies such qualities of mind as intellectual curiosity, passion for truth, respect for evidence and an appreciation of the necessity for free commutation of science.

C. V. Good, Dictionary of Education (1973)

Operational definition

Scientific attitude is a score obtained by a student on Scientific Attitude Scale and a Situational Test on Scientific Attitude which comprises of critical thinking, open mindedness, to be ready to change the decision, to be curious, not to believe in superstitions, to suspend the judgment until suitable support is obtained, to be intellectually honest, seeking to adopt different planned procedures in solving the problems and to have respect for scientific experiments.

2. Scientific Attitude Development Programme

Operational definition

The programme prepared by the researcher for the Development of Scientific Attitude in school students, is Scientific Attitude Development Programme. It includes 13 activities as follows-


3. School Students

Conceptual definition

An organized group of pupils pursuing defined studies at defined levels and receiving instruction from one or more teachers frequently with the addition of other employees and officers and a staff of maintenance workers, usually housed in a single building or group of buildings.

C. V. Good, Dictionary of Education (1973)
Operational definition

The group of students those are studying in 8th and 9th standard in Marathi medium schools.

4. A Study

Conceptual definition

The activity of learning or gaining knowledge either from books or by examining things in the world.

Illustrated Oxford Dictionary

Operational definition

A study means knowing and understanding about the level of Scientific Attitude in school students, preparation of a Scientific Attitude Development Programme for 8th and 9th standard students and testing its effectiveness.

1.4 Need and Significance of the Study

The Directorate of Extension Programmes For Secondary Education, Government of India, in its brochures on Evaluation in General Science states one of the objectives of general science as ‘Pupil should adopt the scientific attitude in making statements, accepting information and forming beliefs’.

Almost all the commissions and committees on school education, which were formed after independence, have stated the importance of development of scientific attitude in the students. National policy on Education (1986) has identified scientific temper as one of the 10 core areas. Accordingly development of scientific attitude of mind has been given an important place in the school education. However constituents of scientific attitude may not automatically develop in the outlook of the learners. The teacher will have to make an effort to point out these aspects in the process of teaching science and try to inculcate this outlook in the behavioral pattern of the learners. Scientific attitude is
warranted not only in pursuit of scientific problems but also in solving problems at home and in the society.

In a survey conducted by the researcher on 150 students studying in 8th, 9th and 10th standard in the schools of Solapur District, it was found that –

1. No student is having high level of Scientific Attitude.
2. Only 22 i.e. 14.67% students are having Scientific Attitude above average level.
3. 128 students i.e. 85.33% students are having Scientific Attitude at the average level.

From this study it was clear that the Scientific Attitude Development Programme for 8th, 9th and 10th standard students is badly needed.

Students in the 8th, 9th and 10th standard are in the age between 13th to 15th years. This age is important as far as curiosity, critical thinking, decision making etc. are concerned.

The Scientific Attitude Development Programme prepared in this study is useful for the schools to develop different components of scientific attitude among the students and thereby to contribute to human resource development and to the development of genuine democracy.

1.5 Objectives of the Study

1. To measure the scientific attitude of 8th and 9th standard students.
2. To compare the levels of scientific attitude of boys and girls.
3. To compare the levels of scientific attitude of 8th and 9th standard students.
4. To find out the levels of different components of scientific attitude among the students.
5. To prepare a Scientific Attitude Development Programme for 8th and 9th standard students.
6. To study the effectiveness of the developed programme.
7. To make recommendations to the concerned institutions and personnel with reference to the development of scientific attitude

1.6 Assumptions of the Study

Scientific attitude can be measured by a Scientific Attitude Scale as well as Situational Test on Scientific Attitude.

1.7 Hypotheses

Research Hypotheses

1. There is a significant difference in the level of scientific attitude of boys and girls.

2. There is a significant difference in the level of scientific attitude of 8th and 9th standard students.

3. There is a significant difference in the level of scientific attitude of control group and experimental group after the implementation of the programme.

4. There is a significant difference in the control and experimental group with reference to the mean level of critical thinking.

5. There is a significant difference in the control and experimental group with reference to the mean level of open mindedness

6. There is a significant difference in the control and experimental group with reference to the mean level of readiness to change the decision.

7. There is a significant difference in the control and experimental group with reference to the mean level of curiosity.

8. There is a significant difference in the control and experimental group with reference to the mean level of ‘Not to believe in Superstitions Component’ of Scientific Attitude.

9. There is a significant difference in the control and experimental group with reference to the mean level of ability to suspend the judgment.
10. There is a significant difference in the control and experimental group with reference to the mean level of intellectual honesty.

11. There is a significant difference in the control and experimental group with reference to the mean level of ability to seek to adopt different planned procedures in solving the problem.

12. There is a significant difference in the control and experimental group with reference to the mean level of respect to scientific experiments.

**Null Hypothesis**

1. There is no significant difference in the level of scientific attitude of boys and girls.

2. There is no significant difference in the level of scientific attitude of 8th and 9th standard students.

3. There is no significant difference in the level of scientific attitude of control group and experimental group after the implementation of the programme.

4. There is no significant difference in the control and experimental group with reference to the mean level of critical thinking.

5. There is no significant difference in the control and experimental group with reference to the mean level of open mindedness.

6. There is no significant difference in the control and experimental group with reference to the mean level of readiness to change the decision.

7. There is no significant difference in the control and experimental group with reference to the mean level of curiosity.

8. There is no significant difference in the control and experimental group with reference to the mean level of ‘Not to believe in Superstitions Component’ of Scientific Attitude.
9. There is no significant difference in the control and experimental group with reference to the mean level of ability to suspend the judgment.

10. There is no significant difference in the control and experimental group with reference to the mean level of intellectual honesty.

11. There is no significant difference in the control and experimental group with reference to the mean level of ability to seek to adopt different planned procedures in solving the problem.

12. There is no significant difference in the control and experimental group with reference to the mean level of respect to scientific experiments.

1.8 Scope of the Study

1. The findings of this study will be applicable to all the schools affiliated to State Board of Education, in Maharashtra.

1.9 Delimitations of the Study

1. The survey in this study was delimited to 644 students studying in 8\textsuperscript{th} and 9\textsuperscript{th} standards of 10\% i.e. seven Marathi Medium Secondary Schools in Malshiras Taluka (Dist. Solapur, Maharashtra).

2. The experimental work was delimited to 40 (20 boys and 20 girls) 8\textsuperscript{th} standard and 40 (20 boys and 20 girls) 9\textsuperscript{th} standard students studying in one Secondary School from Malshiras Taluka.

3. The study was delimited to the following nine components of Scientific Attitude.
   i. Critical Thinking
   ii. Open Mindedness
   iii. To be ready to change the decision
   iv. To be curious
   v. Not to believe in superstitions
vi. To suspend the judgment until the suitable support is obtained
vii. To be intellectually honest
viii. Seeking to adopt different planned procedures in solving the problem
ix. To have respect for scientific experiments

1.10 Limitations of the Study

10th standard students were not included in this study because schools generally do not permit researchers to experiment on these students, as they are going to appear for S.S.C.Board Examination.

1.11 Chapterization

The chapter wise brief account of the study is as follows:-

Chapter I – Introduction

The first chapter ‘Introduction’ includes theoretical information regarding to attitude, scientific attitude, and nature of some components of scientific attitude related to this research.

In the second part, the statement of the study, definitions of the terms, need and significance, Objectives of the study, assumptions, Hypothesis, scope, delimitations and limitation are presented.

Chapter II – Review of Related literature

The second chapter deals with the review of related literature. It is presented in two parts – review of related literature and the review of related research from both abroad and India.

Chapter III – Plan and Procedure

The third chapter deals with the plan and procedure of the study. It includes the detailed procedure of the study. The researcher has presented the objective wise procedure of the study, the research methods, the tools used for data collection and the sample selection.

Chapter IV – Analysis of Data and Interpretations
This fourth chapter Analysis of Data and Interpretation deals with the pursuance of the objectives and the assumptions of the study. The data is presented in tabular and graphic forms. The observations, interpretations and conclusions based on the data analysis are given in this chapter.

**Chapter V – Summary, Conclusions and Recommendations**

The fifth chapter deals with the findings, conclusions and the recommendations for the different authorities and the people. It also includes the discussion and the topics for further research.

Thus, in these present chapters the researcher has given the background of the study, the statement of the problem, definitions of the terms, significance of the study, objectives of the study, assumption, hypotheses, scope and delimitation and chapterization. The next chapter deals with the review of related literature.