A developing country, India is trying its best to cope with other nations in every field of development. Since education is the most potent instrument for the progress of a nation, the quality of education has to be improved. It is universally acknowledged that any attempt at improvement in the quality of education is ultimately dependent on the quality of instruction imparted in the classroom.

Our educational system is authoritarian in its approach and highly examination oriented. Schools are considered as knowledge shops and teachers as information managers. Too much emphasis on memory work is against the psychological principles of learning. In pupil-centred teaching the principle of learning by doing is stressed and pupils actively participate in the teaching learning process. But to-day, the participation of students is restricted only to asking and answering questions on what teacher has taught.

Due to explosion of population students coming from different areas having different socio-economic status, aptitude, interest, attitude etc. sit in the same classroom. Among them some are slow learners and some are fast learners. We consider the achievement of students in a class as normally distributed with below average at the lower end, above average at the upper end and average at the middle. Most of the time teachers teach for the average neglecting the above average and below average, in their
hurry to finish the syllabus. In the classroom the above average feel bored and the slow learners remain passive and day by day they become poor in the subject. We should do something to save the intelligent students from frustration and the dull from discouragement.

Teaching is a dynamic and complex phenomenon involving teachers, students and the subject matter. The efficacy of the teaching-learning process has a very close relation with the teacher's teaching style and the students' learning style. In India, efforts need to be made in teacher education programme, to train the future teachers to handle teaching in such a way as to match the objectives of education and students' learning styles and personality dimensions.

Studies of teacher effectiveness have failed to identify a single pattern of effective teaching. No single teaching model, however attractive it may seem, is a perfect one. There is not any particular method of teaching which fits universally in all teaching situations, all teachers and all students. It implies that we require a different method to teach different subjects, to teach pupils with differential characteristics.

A sound programme for the training of teachers is essential for the qualitative improvement of education.

To bring a qualitative change in the system of education the models of teaching need to be implemented faithfully in
classroom teaching with certain modifications. Keeping in view the previous history, the National Council of Educational Research and Training (NCERT) has taken a wise step to introduce innovations, such as programmed instruction, team teaching etc. at educators' level and then at the teachers' training level. In this context the examination of effectiveness of teaching models has become important.

The models approach to teaching was first described by Joyce and Weil (1972) who defined a model as, "a plan or pattern that can be used to shape curriculum or course, to design instructional materials, and to guide teachers' actions."

Joyce and Weil (1980) have further clarified the term, that model of teaching consists of guidelines for designing educational activities and environments. It specifies the ways of teaching and learning that are intended to achieve certain kinds of goals.

Flanders (1985) has described model of teaching by stating that "a model is more than a description of teaching behaviour, it is a curriculum design in which instructional materials, learning activities, special objectives, class formation and patterns of teaching behaviour are synthesized into a coherent understandable gestalt."

1.1 MODELS OF TEACHING

Models of teaching have been developed to help a teacher to improve his capacity to teach more children and create a richer and more diverse environment for them. A model of teaching has been defined in various ways by research workers who
worked in the field of teaching.

One of the most comprehensive definition given by Joyce and Weil (1972) runs as, "Model of teaching can be defined as an instructional design which describes the process of specifying and producing particular environmental situations which cause the students to interact in such a way that a specific change occurs in their behaviour".

All good models of teaching have some **common characteristics** which are described as follows:

1. **Scientific procedure**: A model of teaching is not a haphazard combination of facts but on the other hand it is a systematic procedure to modify the behaviour of learners. They are based on certain assumptions.

2. **Specification of learning outcome**: All models of teaching specify the learning outcomes in detail on observable student's performance. What the student will perform, after completing an instructional sequence, is specified in detail.

3. **Specification of environment**: This means that every model of teaching specifies in definite terms the environmental conditions under which a student's response should be observed.

4. **Criterion of performance**: A model specifies the criteria of acceptable performance which is expected from the students. The model of teaching delineates the behavioural outcomes which the learner would demonstrate after completing specific instructional sequences.
5- **Specification of operations.** All models of teaching specify mechanism that provide for students reaction and interaction with the environment.

**Functions/Role of a Model of Teaching**

The basic question which may be asked by a reader here, is why should we develop a model of teaching and what are its specific functions or how does a model help the practising teacher in classroom teaching-learning process? These functions are:

1. **Guidance:** A model of teaching serves a useful purpose of providing in definite terms what the teacher has to do. Teaching becomes a scientific, controlled and goal-directed activity. Thus a model provides guidance to the teacher as well as to the students to reach the goal of instruction.

2. **Developing curriculum.** A model of teaching helps in the development of curriculum for different classes at different levels.

3. **Specification of Instructional material.** A model of teaching specifies in detail the different types of instructional materials which are to be used by the teacher to bring desirable changes in the personality of the learners.

4. **Improvement in teaching.** A model helps in creating conducive environment for the teaching-learning process and improves effectiveness of teaching.

**Assumptions of Models of Teaching**

Models of teaching have been evolved on the following assumptions:
1. The first assumption underlying all models of teaching is that teaching is the creation of appropriate environment. These are various component parts of the teaching environment (called independent variables) which are inter-dependent.

2. The second assumption is that content, skill instructional roles, social relationships, types of activities, physical facilities and their use, all form an environmental system whose parts interact with each other to constrain the behaviour of all participants, teachers as well as students.

3. The third assumption is that different combinations of these elements create different types of environments and elicit different outcomes.

4. The fourth assumption is that models of teaching create environment. They provide rough specification for environment in the classroom teaching learning process.

Elements of a Model

A model has the following elements:

1. A focus
2. A syntax
3. Principle of Reaction
4. A social system
5. A support system

1. Focus

Objectives of teaching and aspects of the environment, generally, constitute the focus of the model. What is aimed to be achieved is found to be the focus of most of the models. Thus focus is the central aspect of a teaching model and refers
to the good objective of teaching.

2. Syntax

The second element, syntax or phrasing of the model, refers to the description of the model in action i.e. the kind of activities which are organised at well-defined stages of the whole lesson. It is the sequence of steps involved in the organisation of the complete programme of teaching.

3. Principles of Reaction: It tells about the nature of interaction between the teacher and the learners. It explains the procedure in which the teacher deals with the reaction of the learners.

4. Social System

The fourth element is the social system which refers to two elements: (i) students and teacher roles, particularly hierarchical relationship or authority relationships, and (ii) norms or the student behaviour which is rewarded. Social system is an important element of every model. Specific learnings are very much controlled by the kinds of relationship that are structured during the process of teaching. Models of teaching prescribe system for teaching of attitudes, skills and understandings etc.

5. Support System

The last and the most important aspect of a model is the support system which means to provide facilities to teacher and the students to successfully implement the strategy of teaching. For example, if we want to implement individualisation, we have to provide a number of audio-visual aids, teaching machines, programmed text etc. to cater to the needs of individual learner.
Classification of Models of Teaching

Models can be classified into following categories:

I. Psychological Models of Teaching.
   3. Flander Verbal Interactional Model by Flander.

II. Information Processing Models:
   2. Inductive Thinking Model by Taba, 1967.

III. Behaviour Modification Models.

IV. Modern Models e.g. 1. Mastery Learning Model (Bloom, 1971).

1.2. INQUIRY TRAINING MODEL

Children have an inquiring mind by nature. They ask many questions about the objects they see, natural phenomena they experience and social events they encounter as they grow. Given the opportunity, their inquiry skills sharpen as they grow. It is, therefore, essential that teachers should provide an opportunity for each child to inquiry-skill building, their primary urge to inquire, to explore, to create. The National Policy on Education - 1986 and The Curriculum Framework for School Education developed by NCERT has stressed the need for cultivating children for inquiry, independent learning and the scientific temper. In order to develop inquiry skills among children, teacher should adopt inquiry training model in
classroom teaching. J. Richard Suchman has designed such a model to teach students a process for investigating and explaining unusual phenomena.

Inquiry Training Model is a process-oriented teaching strategy designed to teach students a systematic way to approach questions or problems encountered in various content areas. Though originating in science, the process of inquiry can be applied to a wide variety of situations.

Inquiry can be conducted on three levels. It can be viewed as a systematic way to investigate a question or problem. Scientists use the process of inquiry to generate and validate knowledge. In other cases such as governmental fact finding missions, congressional investigations, or probe into alleged inappropriate practice are all questions of inquiry.

1. It can occur at personal level. A person can make an inquiry why his automobile gives low average mileage, why a factory is running under loss etc.

2. It can be conducted at the classroom level. It is teaching strategy designed to teach students how to attack questions and problems encountered in various content areas.

As a teaching strategy, the inquiry model may be defined as a five step method. The steps are:
- Questions or problem identification,
- Hypotheses generation,
- Data gathering,
- Assessment of hypotheses through data analysis, and,
- Generalising.
When teachers use the inquiry, they help students through these steps as they tackle some problem that is meaningful to them.

(3) On the third level, inquiry is a model designed for the development of thinking skills. Students develop these skills at general problem solving level as well as at micro thinking skills level.

Inquiry training assumes all knowledge as tentative. As new knowledge generates, the explanation and solution to problems change. It is also assumed that human beings are inquisitive by nature and inquiry skills may be sharpened through systematic training. It also assumes that the team efforts enrich the inquiry more quickly and efficiently.

Elements of the Inquiry Training Model:

The following are the five elements which form the layout of this teaching model:

I. Focus - It includes general and specific goals

1. General goal is to help the students develop the intellectual discipline and skills required to conduct an inquiry in a systematic way;

2. Specific goal is to develop scientific process skills; to develop strategies for creative inquiry; to develop spirit of enquiry, autonomy of the learner, tolerance for ambiguity and tentative nature of knowledge.
II. Syntax - The inquiry training model has five phases.

Phase I Encounter with the problem: It includes the following:
- Explain inquiry procedures, and,
- Presentation of discrepant event.

The teacher presents a problem or a puzzling event to the class. The presentation may be verbal or written on the chalkboard or on the worksheet or on an overhead projector slide. With the presentation of the problem, the teacher explains the rules or procedures of inquiry to the students. The rules of procedure are:
- the question should be phrased in such a way that they can be answered by 'yes' or 'no'.
- once called upon, a pupil has to ask a series of sequenced questions to pursue his line of inquiry.
- any pupil can test a proposed explanation at any time.
- if required in a particular situation, the pupils can be allowed to consult resource books, if they wish. They can be allowed to have a small group consultation if they like.

Phase II. Data gathering- exploration or verification:
This phase includes the following:
- Verifying the nature of objects and conditions, and,
- Verifying the occurrence of the problem situation.

The pupils retrieve the necessary information for formulating a possible explanation regarding the problem under inquiry.
Phase III Data gathering Experimentation: This phase includes the following steps:

- Isolating relevant variables, and
- Hypothesising and testing causal relationships.

The exercise of data-collection (as in Phase II) continues with the difference that, by isolating relevant variables, the pupils formulate hypotheses, test these, and try to establish cause effect relationship.

Phase IV: Formulating an Explanation-

It includes formulation of rules or explanation. On the basis of Phase III, viable explanation for the puzzling event can be formulated or a solution to the problem enunciated.

Phase V: Analysis of the Inquiry Process-

In this phase, analysis of the inquiry process is done with a view to develop more effective strategies. The pupils analyse the inquiry process to examine its strengths and weaknesses. Answers to the questions like—was the technique adopted by us the only one or could there be other alternative? which one of these alternatives is more significant? If so, in what ways? etc., need to be sorted out.

III. Principles of Reaction-

- ensure that the rules of inquiry are followed in process,
- use the language of inquiry,
- avoid evaluating the students' theories,
- ask students to make clear statement,
- encourage interaction.

IV. Social System-

At the start of inquiry teacher presents a puzzling situation, after this step students and teacher participate in the process of inquiry as equals. Teacher encourages students' involvement and facilitates frank discussion of the problem situation among themselves. Teacher's role is to respond to students' inquiry problems with necessary information.
V. Support System-

All the specific conditions required for the smooth functioning of all phases of the model is called support system. These would include books, films, laboratories to conduct experiments etc.

Planning for Inquiry Activities:

(i) Identifying goals:- The planning process begins with the careful consideration of goals. Two types of goals are to be identified. Content goals and thinking skills goals.

(a) Content goals: The inquiry model is designed to teach two types of content goals. The first is the identification of cause and effect relationships. Second is the identification relationships between concepts that are not necessarily casually linked. These relationships are called correlational.

(b) Thinking skills goals:- Inquiry model is more effective in realising thinking skills goals than content goals. Inquiry is less efficient means of reaching the content goal than another model would be. A teacher choosing inquiry model would have as an important goal the development of the students' ability to recognise problems, suggest tentative answers, identify and gather relevant facts, and critically assess the tentative solutions. These are the skills of inquiry and the development of these skills are the purposes of the inquiry model.

(ii) Identifying the problem:- Once the teacher has identified goals to be achieved, the next task is to prepare a problem or question that relates to the goals. The identified problem should be such that it throws a challenge to the students. The
problems or question is puzzling one and motivates the students to conduct an inquiry to solve the problem or answer the question.

(iii) Planning the data gathering stage:- In order for the investigation to successfully proceed, the teacher must anticipate a procedure for gathering data which is designed to answer the question or solve the problem. The procedure should come from the students to the extent possible, the teacher's role in the process is to guide and facilitate the process. This process may be divided into two stages, data gathering verification and data gathering experimentation stage. In the first process students verify the nature of objects and conditions, and verification of the occurrence of the problem solution. In the second stage of data gathering, the students indulge in experimentation, students isolate relevant variables and test hypotheses through experimentation.

The planning for inquiry activities is primarily a matter of organisation. Once the goals, sequencing and scheduling of events are clearly determined, the process proceeds very smoothly.

(iv) Implementing inquiry model lesson:- Having prepared an inquiry problem, anticipated the data gathering process and considered the scope and length of the investigation, the teacher is prepared to implement it.

(v) Presenting the question or problem:- The inquiry process begins with the presentation of the question or puzzling situation. There are a variety of ways that the questions can be asked and the exact form is a matter of teacher's judgment. The important thing is to clearly communicate the problem to the students.
Hypothesizing:- Once the question or problem has been clarified and understood, the class is ready to try to answer or solve it. In providing a tentative answer, the students get involved in the process of hypothesizing through the process of verifying objects, events and conditions. After students have developed a list of hypotheses, they enter into next phase of data gathering and data analysis phases. In data analysis phase students assess the hypothesis on the basis of data. This is done through experimentation and observations.

Generalizing:- Closure occurs in an inquiry lesson in several ways. The first is through the acceptance, rejection or modification of the hypothesis. The second is by tentatively generalising on the basis of conclusions. The generalizing process may lead to new questions, and inquiry process may move forward.

Advantage of Inquiry Training Model of Teaching: Inquiry training model is now being recognised as the most indispensable model of teaching as it helps in developing spirit of inquiry for creativity among children. The knowledge gained in this way is much more superior and everlasting than got through traditional method of teaching. Inquiry technique blesses the students with extra energy to face new challenges and supplies impetus to work with double zeal. This model ensures sublimination of natural instincts. Besides such a teaching helps to develop the spirit of cooperation, team spirit and other good habits which make a student an acceptable citizen.
Inquiry training can be used in teaching any curriculum area—social studies, mathematics, accounting, science, language and arts. Examples based on Inquiry Training Models: The following example is taken from the Inservice teacher-education package developed by the Ministry of Human Resource Development in context with NPE-1986 and the Programme of Action.

Amrit's family was away to Shimla during the summer vacation. On their return they were shocked to see their lawn destroyed. Hedges were found damaged. Several other plants were badly affected. The lock of the door was found intact. They opened the lock. In the living room, two big pictures were lying on the floor with glasses broken. Dust had settled on all the furniture. They looked towards the windows. The windows were closed. The question, what could have happened was written large on everyone's face. You may help Amrit's family by working out what might have happened to their lawn and the living room in their absence during the vacation.

Classroom talk between teacher and students is being given here:

Teacher- what might have happened?
Seema- Sir, there could have been children like us.
Deepa- Sir, couldn't there have been a storm?
Teacher- Children, I can't answer. Develop possible hypotheses.
Vivek- Were there footmarks of stray cattle in the lawn?
Teacher- No.
Sapna- Was some pet left locked inside the living room?
Teacher- No.
Ram- Was something found missing?
Teacher- No.
Bindu—Sir, the theft motive is then ruled out.

Gurmeet—But we can't rule out the storm having taken place.

Teacher—Verify it yourself (a suggestion).

Sham—Were the windows closed?

Teacher—Yes.

Sham—And the ventilators?

Teacher—No.

Sham—Here lies the truth. The strong wind might have entered through the ventilators and pictures might have fallen.

Teacher—Can you check further?

Pooja—Did the news about the storm appear in the local newspapers during this period?

Teacher—Yes.

This confirms the earlier assumption. This is one of the several approaches to inquiry.

One more Example: After explaining the method of preparing oxygen gas in a science class, the teacher can make use of inquiry training model during the preparation of oxygen gas in the laboratory. During the preparation of gas, the teacher may deliberately make a mistake which the students are not aware of. Then, the students may be encouraged to guess the reasons why the gas is not prepared. The students will then arrive at a conclusion after going through various hypotheses. The construction of dialogue between the teacher and the students in this laboratory situation is not being given here.
1.3 MASTERY LEARNING

According to the Secondary Education Commission (1954) the present practice of mechanically applying the same methods to dull, average, as well as bright children is responsible for much of the ineffectiveness of the instruction given in schools. If these various groups of children are allowed to proceed at their own appropriate pace and the method, approach as well as the curricular load are properly adjusted, it will be good for all of them. It will save the dull children from discouragement and the bright children from a sense of frustration.

The Education Commission (1964-66) says, "suitable provision should, however, be made for the education of the dull who on account of their slower rate of mental development, cannot learn at the ordinary pace of normal children. In the ordinary classes, where instruction is traditionally geared to the needs of the average child, the dull have to work under great hardship. They need individual attention, special remedial help and probably also a modified curriculum to suit their rate of learning."

An individual differs from another individual in terms of interest, attitude, aptitude, achievement, etc. As a result of the impact of educational technology a few ideas have gained currency in education in order to cater to these individual differences. One idea is individualized instruction, giving students opportunity to learn at their own pace, taking their own time. This programme promotes the optimum development of the potentialities of the individuals.
But, individualized instruction cannot be carried out in the context of group instruction. Modern educators are eternally on the look out for new time-saving and effective methods. As the number of pupils is very large, it is not practicable to prepare individualized Instructional materials to suit everyone's need.

Mastery learning strategy can meet all these problems adequately. It is an individualized instruction within the context of group instruction. Recent researches conducted in advanced countries show that mastery learning is one of the most effective technique for teaching difficult and skill subjects. Efforts to undertake studies in this line were attempted in India also. Benjamin S. Bloom (1974) has suggested that the strategy is suitable for group based instruction and can be taken up by an ordinary teacher.

In the International Encyclopedia of Education, Mastery Learning is defined as two things. First, it is a philosophy which asserts that any teacher can help virtually all students to learn excellently, quickly and self-confidently, the teacher can help 'dumb', 'slow', 'unmotivated', students to learn the "smart", "fast", and "motivated students". Such learning not only improves many students' chances for long term social and personal prosperity, but teachers' chances as well. In particular, the students acquire those basic personal competencies which ensure that they can and want to undertake lifelong learning and the teachers acquire some basic professional
competencies which ensure that they can and want to keep teaching.

Second mastery learning is a set of old and new individualised instructional ideas and practices that consistently help most students to learn excellently, quickly and self-confidently. These ideas and practices produce instruction that is systematic, provides help to students when and where they have learning difficulties, provides sufficient time for students to achieve mastery and provides a clear criterion of what constitutes mastery.

The basic idea underlying the mastery structure are hundreds of years old. This idea in various forms was emphasised by Comenius in the seventeenth century, Pestalozzi in the eighteenth century and Herbert Spencer in the nineteenth century. The twentieth century is the most important period for the growth of mastery learning. Franklin Bobbit (1918), Washburne (1922), Mirrison (1926), Ralph Tylor (1930), John B. Carroll (1963), Benjamin S. Bloom (1971) are the major proponents of Mastery Learning. The concept of mastery is explained theoretically by John B. Carroll and is transformed into a learning strategy by Benjamin S. Bloom. Researches are going on in this field in order to establish the effectiveness of Mastery Learning and also to modify the strategy for better results.

FACTORS RESPONSIBLE FOR MASTERY LEARNING

1. Aptitude for Particular Kinds of Learning;

Test results show that, those who have high aptitude reach high achievement levels and can learn complex ideas whereas those
with low aptitude level have low achievement and can learn only simple ideas. According to John B. Carroll's view aptitude is the amount of time required by the learner to attain mastery of learning task. With the support of research results, it is seen that 95 per cent of the students (neglecting the disabled children) can learn a subject to a high level of mastery if given sufficient learning time and proper guidance.

2. Quality of Instruction:

The instruction should cater to individual differences. Individual students may need different types and qualities of instruction to learn the same content and to reach the mastery level. Quality of instruction is defined in terms of the degree to which the presentation, explanation and ordering of elements of the learning task approach the optimum for a given learner. The available research suggests that some students need active involvement in the learning, more concrete instructional cues, more practice and reinforcement than others. Thus, quality of instruction must be developed to individual needs rather than the needs of a group as a whole.

3. Ability to Understand Instruction:

This is the ability of the learner to understand the nature of the task he is to learn and the procedures he is to follow in its learning. If the student can understand the teacher's communications and instructional materials,
he will have little difficulty in learning the subject.

In order to improve the ability to understand instruction, teachers must vary their instructional patterns to meet the needs of each individual students. Various instructional strategies like small group study sessions, tutorial help, workbook, programmed instruction materials, audio-visual methods, academic games, etc. help a teacher to accommodate the differences in the students' ability to understand instruction.

4. Perseverance:

Perseverance is the time a learner is willing to spend in learning. If a student is expected to spend a certain amount of time to master a task and he spends less than this amount in active learning, he is not able to master the task. Students differ in the amount of perseverance for a specific task. Perseverance is related to the success in carrying out the previous task. If it was rewarding, more time is likely to be spent in active learning. Thus, perseverance can be increased by the frequency of reward and by high quality instruction.

5. Time Allowed for Learning.

We follow a fixed time table in every school. The time allowed for each period is too much for certain students and too less for some others. Since aptitude determines rate of learning, most of the students achieve mastery if they are allowed the necessary amount of time for a particular task. The time needed for mastering a task differs from individual
to individual. So in group instruction this difference can be accommodated to a greater extent by improving the quality of instruction by the proper use of allotted time. The task of strategy for mastery learning is to find ways of altering the time individual students need for learning as well as ways of providing whatever time is needed by each.

Operating Procedures for Mastery Attainment

Teachers planning to implement Mastery Learning in their schools and classrooms must accomplish four major steps: 1. defining mastery, 2. planning for mastery, 3. teaching of mastery, and 4. grading for mastery.

1. Defining Mastery

The first task is the identification of the most essential, critical course outcomes or objectives. The objectives selected must be defined in behavioural terms and they must have great potential for transfer or applicability to future learning. After the identification of objectives, a final or summative test is prepared. The functions of this test are: 1. assess the degree of student learning over the entire course, and 2. evaluate or grade the overall quality of student learning. Based on an examination of the objectives and related test items a standard of performance for the summative test is set that, when achieved, will be accepted as mastery of the course. For example, fixing a criterion for mastery as 95 per cent of students in the class should attain 95 per cent of the objectives. The entire course is then divided into a series
of smaller learning units with a set of objectives for each unit. Each unit consists of inter-related sets of facts, concepts, principles, skills and appreciations. Then, the units are to be sequentially arranged so that what is learnt in one unit will not be forgotten and will help in the learning of subsequent units easily.

The last task is to develop formative tests for the assessment of student learning in each unit and also to fix a performance standard for each formative test. These tests serve the purpose of diagnosis and not grading. The mastery performance standard will help the teacher in identifying students who have successfully mastered the unit and those who will require additional time and help for mastery attainment.

2. Planning for Mastery

The step involves plans for helping students acquire the objectives of each unit. The materials and methods of instruction are to be planned well in advance. Supplementary materials for those who fail to acquire the objectives and enrichment programme for 'initial masters' of the group are to be decided. Methods for the interpretation of formative test results are to be planned and approximate amounts of time must be allocated to the original instruction, corrective instruction and testing.

3. Testing for Mastery

The function of the teacher is to specify what is to be learned, to motivate pupils to learn it, to provide them with instructional materials, to administer these materials at a rate suitable for each pupil, to monitor students' progress,
to diagnose difficulties and provide proper remediation for them, to give praise and encouragement for good performance, and to review and give practice to maintain pupils' learning over long periods of time.

The first task of the teacher is to give orientation to pupils of the procedures in mastery learning. The second task is to teach each learning unit with the original instructional plan. Then the teacher should administer the formative test. Based on the test result the students who have achieved mastery are to be given enriched learning materials and those who have not achieved mastery should be given corrective learning materials. The former may be asked to teach the latter. The maximum time for learning should be provided to children by taking extra time in addition to the regular class hours. This cycle of original instruction, formative testing and certification of mastery or correction is repeated unit by unit until all the units have been completed. After the completion of all the units, a summative test is to be administered for the establishment of mastery of the entire content.

4. Grading for Mastery.

The main function of grading in mastery learning programme is to reward students for the acquisition of the essential, critical course objectives. Grades are assigned to pupils based on their performance in summative test. Here the grades are determined on the basis of the number of pre-determined objectives they have attained rather than comparison between
individuals. When the students achieve the pre-fixed mastery level (say 95 per cent of objectives) they will be given A grade and others are given B, C, D, E and F grades based on the number of objectives they have attained.

The mastery grading is designed to engage students in 'competence motivation', that is, the desire to compete against oneself and the objectives to be learned. It disengage students from 'competition motivation', that is, the desire to compete against others.

The mastery learning strategy is based on two major premises, which have been established and validated by many educators. According to Herganahahn (1976) the two premises of the mastery learning strategy are as follows:

1. Students learn at different rates: Age and grade level are in no way guide to the appropriateness of learning task. A task which is right for one learner may be wrong for another who has already achieved that learning, or for one who is not ready for it. A student should not be allowed to the next learning unless he has mastered it and is ready for next learning task. This implies that the student should be allowed to learn at his own rate.

2. Learning's incremental: In most instances the child builds up his learning block by block like a wall, some learning acts are fundamental for other learnings.
It is impossible to achieve a complex learning without first having mastered the simple learning.

**Significance of Mastery Learning**

The conventional method of classroom instruction are under the fire from all sides. Therefore, it becomes imperative to look for a method of instruction which would replace the lecture model of instruction without involving extra expenditure and waiting for new technology. Mastery learning strategy is being advocated as a viable alternative to the conventional method of instruction.

Pangotra and Kishore (1984) have enlisted the following plus points of mastery learning strategy for its viability to the lecture method of instruction:

1. It has the individual variability in the terms of rate of learning.
2. It lays emphasis on the consolidation of learning.
3. It involves a constant interaction between the learner and the learning material. Therefore, the learner is always alert and busy.
4. The self-testing exercises under the mastery learning procedure enable the student to chart his progress towards the prescribed performance objectives.
5. It minimizes failure and maximises the chance of successes.
6. It lays emphasis on independent study and self direction.
(7) It increases the student motivation and produces greater resourcefulness on the part of the student.
(8) It results in better retention of subject matter.
(9) It involves team learning in the form of peer tutoring and individual guidance, and hence build up students' self concept.
(10) It provides immediate reinforcement of the student and hence results in effective learning.
(11) It results in better mental health of student as the failure in the mastery test does not count against the student.

Mastery learning strategy lays emphasis on structuring and sequencing the subject matter which has been advocated strongly by Bruner (1967) in his learning theory. In his report, Bruner maintains that it is necessary to understand how a student perceives what he or she is learning. An economical mode of instruction is to divide learning into series of steps.

It is always worthwhile for a student to achieve a good level of performance for a learning task prior to his moving on to the next one. For this one can easily make the classroom instruction rate-centred. Mastery Learning Strategy dispenses with the lecturing situation and could be thought of producing better understanding of the subject matter and inducing positive attitude among students.
Strategies of Mastery Learning
(A. Bloom's "Learning For Mastery"

Bloom's mastery learning strategy is developed upon the assumption that up to 95 per cent of students can learn much of what they are taught to the same high levels typically reached by only our best students. The trick, Bloom argues, is being able to define what we mean by mastery of a subject and then being able to provide each student with the time and the quality of instruction he needs to demonstrate this mastery.

Bloom's strategy is primarily designed for use in the group-based instructional situation where the time allowed for learning is relatively fixed, although his basic ideas are equally applicable to individual-based instructional situations. Carroll's (1963) model of school learning proposed that each student could master a given topic if he was provided the time he needed to learn. Bloom's mastery learning strategy attempts, therefore, to minimize the time a student needs to learn so that it is well within the fixed amount of calendar instructional time available.

Teacher in Bloom's strategy begins by formulating what he means by mastery of his course. This entails the formulation of a set of instructional objectives that all students will be expected to achieve to a particular mastery performance standard by the course's end. He then breaks his course into a sequence of smaller learning units where each unit
typically covers the course objectives contained in about two weeks instruction and the material in one unit builds directly upon the material in the previous units.

Next, the teacher constructs brief, ungraded, student-stored, diagnostic-progress tests called "formatite" evaluation instruments for all learning units. These instruments will provide him with detailed information or feedback about each student's grasp of each unit's objectives. Finally, the teacher prepares a set of alternative learning materials or instructional correctives keyed to these formative tests. These correctives teach the unit's objectives but they do so in ways different than the teacher's group-based presentation.

Having designed the instructions as best as he can, teacher gets ready to begin the task of teaching. He teaches the first unit in any sequence using his usual group-based instructional methods. But, rather than moving on to the next unit when the first unit is over, he administers the formative test on the unit in order to determine how each student is achieving. He confirms the progress of those who have achieved upon the desired level and identifies those who have not. He administers remedial instruction to realise the unmastered objectives. The student is then given the responsibility to use these correctives as necessary to complete his learning of the first units before the teacher begins the group-based instruction on the second unit.
The teacher follows this cycle of group-based instruction, formative testing and certification or prescription/correction for each student on each unit until all the learning units have been completed. He then administers the course final examination or the "summative" evaluation instrument. This instrument is designed to sum up the student's achievement with respect to the course's overall objectives. The student's performance on the summative instrument, therefore, is used as the sole determinant of his grade. Performance at or above the mastery level designated at the course's outset earns the individual an A grade regardless of how many other individuals might have also earned 'A's. Performance at lower levels earns the individual lower grades, but once again his grade does not depend on how well he has learned relative to his peers.

(B) Keller's "Personalised system of Instruction"

The second major approach to mastery learning is Keller's "Personalized System of Instruction" (PSI). The best way to provide an overview of PSI is say that it is essentially "progressed" instruction where the frames have been substantially enlarged and a personal-social element has been added. It is an approach to instruction that is explicitly designed to convert the role of the teacher from the dispenser of information to the engineer or contingency manager of all student's learning.

As in Bloom's approach, the instructor who wishes to use a Keller approach begins by predefining what course objectives
each student will be expected to master and then subdividing these objectives into a number of learning units. Each unit contains only a few objectives and requires usually a week or less to master the work. For each unit, the instructor then develops a set of procedures whereby the student might master the unit's objectives. Typically these procedures include a list of the unit's objectives, a suggested set of study procedures that rely heavily on the enriched material, book, and their materials, a set of study questions to stimulate the student's thinking and to guide his study, and a set of test items over the units objectives.

Each student then proceeds through these units at his own pace. At the completion of one unit, the student is administered a unit examination by his proctor or teaching assistant. The form of these examinations differs from strategy to strategy depending upon the type of behaviours the student is expected to exhibit. Most Keller - approaches use multiple choice and/short answer essay questions but a few use oral and performance examinations.

Upon completion of the examination, the student turns it into his proctor or teaching assistant for immediate correction. If his performance is judged to be perfect, he is commended by the proctor or teaching assistant and allowed to proceed to the next unit. If not, he is asked to review the unit before returning for retesting. In the early Keller approaches this review was usually accomplished by restudying the original instructional materials for the unit.
A COMPARISON OF BLOOM'S AND KELLER'S APPROACHES

The aim of study of this comparison is that to know the similarities and differences between the two methods. Because this comparison will give the right degree of similarity which is needed to justify that two methods are equally effective for and the differences to justify their degree of identity. So, first of all the similarities of both the methods are given.

Similarities:

First, both strategies start from the assumption that many more students are capable of learning well that which they are taught than has traditionally been the case. And each strategy believes that it is the task of the teacher to design his instruction so that all who can learn well, do learn well. Second, they concur that the instructor must begin to design his mastery learning strategy by prespecifying a set of instructional objectives that each student will be expected to achieve to some high level. Thirdly, they generally agree on how any master approach should be designed for reaching these objectives. The course should be broken into a sequence of smaller learning units where each unit is designed to attain only a few of the course's overall objectives and mastery of one unit is required to move on to the next. Further, each learning unit should consist of two parts. The first part is the original instructional components. Here the student is to be exposed to the material to be learned for presumably the first time. The second part is the feedback correction component.
The function of this component is to monitor the effectiveness of the original instruction on each student's learning and to take appropriate corrective actions when the original instruction has proved to be insufficient. Also, both approaches agree that the student should be graded. Further they concur that the student's grade should depend solely on what he has or has not learned rather than how well he has learnt relative to his peers. That is, the student's grade should be determined solely on the basis of his absolute performance over the learning material rather than on the basis of his relative performance. This place each student in competition with the material to be learnt rather than with his classmates for an essentially unlimited number of A's.

Differences:

The major differences between Bloom's and Keller's mastery learning strategies are less obvious than their similarities. These differences may be summarised as follows:

1. How Mastery is Conceived: The first difference between the strategies lies in their conception of Mastery. For Bloom, mastery is conceived in terms of the student's ability to pull together bits and pieces of instruction into some whole or gestalt. To reach this gestalt, Bloom, like Keller, proposes that each student must master each part of the course, but he also believes that mastery of the parts is not synonymous with mastery of the whole. Hence, he bases a
student's grade solely on the student's performance over all units taken as a whole. For Bloom, mastery is defined operationally as performance at or above a particular level (usually 80 to 90 per cent correct) on course final examination.

Keller's conception of mastery is almost the exact opposite of Bloom's. In Keller's approach mastery of the parts of a course is synonymous with student's grade largely on his performance on each unit. Mastery is defined operationally as perfect performance on a particular number of units by a certain point in time.

(2) Size of the Learning Unit: A second difference between the strategies is the size of the learning unit into which the course is broken. Bloom's strategy tends to use larger learning units than does Keller's strategy. Bloom's units usually correspond to two week's worth of instruction; Keller's units usually corresponds to roughly one week's worth of instruction or even less.

(3) Sequence of Learning Units: A third difference between the strategies lies in how they sequence their learning units. In both Bloom's and Keller's strategies, the teacher is encouraged to sequence his learning units. But in Bloom's strategy, the teacher systematically attempts to sequence the units hierarchically so that the material in one unit builds as directly as possible on the material from the preceding units.
Form of Original Instruction on a Unit: A fourth way the strategies differ lies in the form in which the original instruction of a learning unit is presented. Bloom's units are taught using primarily group-based methods while Keller's units are taught using almost purely individual-based methods.

The Mode of Original Instruction on a Unit: The strategies differ not only in the number of modes used, but also in the types of modes. The Keller strategy typically asks students to learn by a single mode and that mode is reading. Lectures and discussions are used sparingly and students are typically not held responsible for the material presented. The Bloom strategy asks its students to learn by several modes, primarily by reading, hearing lectures, and/or participating in discussions. Students are held responsible for the material presented in each mode.

Facing the Original Instruction on a Unit: In Bloom's strategy, the original instruction is teacher-paced; in Keller's approach, it is student- or self-paced, though teacher pacing is being used more and more to overcome the persistent problem of student in the beginning to learn.

Unit Feedback Instrument: The instrument used in Bloom's strategy, the formative tests, seem to provide more detailed feedback about what the student has or has not learned than the instruments used in Keller's approach.
They are constructed directly from the objectives covered in each unit and they are criterion referenced. Since each objective is tested by one or more test items, the teacher can identify what objectives the student has had and what he has not learned in each unit, and he can investigate how the student's failure to master one objective affected his learning or other objectives. This enables the teacher to return each student to those particular points in the learning unit where the student began to have problems rather than to require the student to waste valuable time searching out the source of his learning difficulties.

Keller's feedback instruments seem to provide far less detailed information about what a student has or has not learned to the unit. Typically, these instruments consist of a few items randomly selected from the item pool designed to test the unit's objectives. The student's performance on this sample is then assumed to be representative of his probable performance over the whole item pool.

However, Keller's feedback instruments are more descriptive than Bloom's in one important respect. Bloom's feedback instruments tend to be the multiple choice, pencil and paper type. Keller's feedback instruments employ a much wider variety of testing formats and item types, including multiple choice, essay, performance and oral questions.

(8) For Unit Master Requirement: An eighth difference lies in the level of performance the student is expected to
exhibit on one learning unit before being allowed to attempt the next. Bloom's approach does not demand perfect performance on each formative evaluation instrument. This procedure stems out of recognition that perfect performance on each formative evaluation instrument may be an unrealistic expectation. Keller's approach does demand perfect performance on one unit for movement to the next. That is each student must attain a perfect score on each unit's feedback instrument. This requirement has proved to be problematic in some application of Keller's ideas.

(9) Mode of Correction: Bloom's remediation strategy differs from Keller's approach in three respects. First, the formative instruments provide such explicit information about how students are changing as a result of the original group-based instruction that the tests can be used not only to describe a student's learning problems, but also to prescribe an appropriate remedial learning sequence. Keller's feedback instruments typically describe only a random position of what the student has or has not learnt as a result of the original instruction. Accordingly, in Keller's approach it is sometime more difficult to prescribe an appropriate and efficient remedial sequence.

Second, Bloom's strategy tends to employ a greater variety of instructional correctives that Keller's approach. While Keller uses tutors as his primary mode of corrective instruction, Bloom uses tutors, small group learning activities
and a number of alternative instructional devices such as alternative text books, work books, programmed instruction, audio-visual materials and academic games and puzzles.

Third, and the most important, Bloom's strategy tends to employ a variety of instructional correctives that have been explicitly selected because they present the unit's material, involve the student and reinforce his learning in ways that are very different from the original instruction. The basic idea underlying Bloom's correction strategy is that it is not useful to return the student to the original instructional materials to help him overcome his learning problems. If these materials had been well-suited to the student's learning requirements in the first place, the student would have had no learning problems to overcome. In Keller's strategy, the instructional correctives tend to be very similar to the original instruction. In fact, with the exception of some tutoring by the proctor, the typical correction procedure in the Keller strategies is to return the student to the original instructional materials for review and re-study. The assumption is that the student does not need a different set of instructional materials, only more practice with the old set.

In the present study Bloom's Mastery Learning model was used.
1.4 **EMERGENCE OF THE PROBLEM**

Though some of the theories on which teaching models are based, may not be very recent, the manner in which Joyce and Weil (1972) have intricately interwoven educational purposes, learning theories and teaching strategies, is novel and promising. The scope of research in this field is very vast. In our country, only recently attempts have been made in this direction. A large number of studies have been undertaken in which models of teaching have been used for teaching and training of teacher educators and students teachers. Since, it is learnt that no such study has been undertaken in this area, to test the efficacy of inquiry training model, mastery learning on student in selection to their achievement, self-concept, adjustment and cognitive styles and also keeping in view the importance of teaching accountancy, the present study was undertaken to investigate the effectiveness of inquiry training model, mastery learning model of teaching accountancy on students' achievement, self-concept, adjustment and cognitive styles.

1.5 **STATEMENT OF THE PROBLEM**

"Effectiveness of Inquiry Training Model, Mastery Learning model and Conventional Method of Teaching Accountancy on Students Achievement, Self-concept, Adjustment and Cognitive Styles".

1.6 **OBJECTIVES**

1. To select the units (i.e. learning material) to be taught by inquiry training model, mastery learning model and conventional method of teaching from the
text book of XI Class accountancy prescribed by J & K State Board of School Education.

2. To construct and standardize Criterion Achievement Test (from the units already selected) for teaching accountancy to XI class Commerce students.

3. To find and compare the mean scores of achievement, self-concept, adjustment, cognitive styles of three groups of students separately (group E1 - taught by inquiry training model; group EII - taught by mastery learning model, group C - taught by conventional method of teaching) taught accountancy without and with the use of Inquiry training model, mastery learning model and conventional method of teaching.

4. To find and compare the mean gain scores of achievement, self-concept, adjustment and cognitive styles of three groups of students (group E1 - taught by inquiry training model; group EII - taught by mastery learning model, group C - taught by conventional method of teaching) taught accountancy with the help of inquiry training model, mastery learning model and conventional method of teaching after the experimental treatment.

5. To find which model/method is more effective than others in terms of students achievement in accountancy.
1. Inquiry Training Model

This is developed around the intellectual confrontation of puzzling situation i.e. focussing on problem, put associated factors together and verify.

2. Mastery Learning

Mastery learning is essentially an instructional technique for the teaching and learning of hierarchical, sequential material. It is systematically planned programme of instruction adopted by a teacher to raise the achievement of students to predetermined mastery level. It involves presentation (cues), feedback (mastery testing), correction (using alternative instructional material and method) till practically all students achieve the desired mastery level.

3. Conventional Method of Teaching

In Conventional Method of Teaching, the teacher is the only active participant in the teaching learning process and the pupils are the passive listeners. He gives lecture to a class of nearly 30-40 students, gives home assignments and administers test periodically. These tests are given only to give marks to the students and have no value in terms of improving the quality of instructions.

4. Academic Achievement

It is the level of learning in a particular area of the subject in terms of knowledge, understanding skill and
application, usually designated by test scores or marks assigned by the teacher or both (Good, 1973).

5. **Self-concept**

Pupils' self concept means those perceptions, beliefs, attitudes and feelings which individual views as a part of characteristic of himself. It is his own conception of his health and physique, intellectual abilities, academic status, behaviour, temperamental qualities, mental health, emotional tendencies and socio-economic status (Good, 1973).

6. **Adjustment**

In the present study adjustment has been defined as person's overt behaviour, his feelings about himself, about others, environment and the way he reacts to external stimulus. Here adjustment means educational, social, emotional and home adjustment (Mittal, 1974).

7. **Cognitive Styles**

Cognitive styles refers to mode an individual employs in perceiving, organising and labelling various dimensions of the environment with the help of field dependence, field independence method and as a measure of Group Embedded Figures Test by Witkin et al. (1971).

8. **Formative Tests**

Formative tests, also called Mastery tests, have been used here as they provide the information necessary to make
instruction appropriate to the needs of the individual for achieving mastery level. Formative tests are administered during the course of mastery learning to find out the levels of students' achievement in a particular area of content and to diagnose pupils' difficulties. These tests are given at the completion of each learning unit. They serve the vital function of providing feedback necessary to design the quality of instruction accordingly.

1.8 NEED AND SIGNIFICANCE OF THE STUDY

The American Institute of Certified Public Accountants (AICPA, 1941) defined Accountancy as:

"The art of recording, classifying and summarising in a significant manner and in terms of money, transactions and events, which are in part; at least of a financial character and interpreting the results thereof."

The role of accountancy has changed from that of a mere record keeping during the first decade of 20th century to the present stage when it is accepted, as 'Information system and decision making activity' (Bierman & Derbin, 1970).

Accountancy has like Science developed its own concepts, assumptions, principles which are unusually acceptable. These principles are called, Generally Accepted Accounting Principles (GAAP) and these form the foundation of systematic and proper Accounting. The development of knowledge, comprehension, Application, Analysis and Synthesis skills pertaining to subject of Accountancy depends to a large extent on scientific methods of Teaching Accountancy.
Economic growth of a nation is linked to Commerce & Industry. The health of which in turn is dependent on qualitative, prudent, manpower that is well trained to comprehend, organise, assimilate financial information and take financial decisions. This depends upon how effectively the subject of accountancy along with its branches was taught at school, college and university levels.

Accountancy deals with financial aspect of Business and its process involving usage of such skills as identification, doing scientific analysis and interpretation, taking decisions on the basis of arrived results. These skills, abilities are developed in students only through effective methods of teaching like inquiry model and Mastery Learning model of teaching.

All mastery strategies are designed to take into account individual differences among learners in such a way as to promote each student's fullest cognitive and effective development. Typically, they accomplish this task by manipulating either the learning time allowed to each student and/or the quality of his instruction through various feedback learning corrective devices.

The results from almost 40 major studies carried out under school conditions indicate that mastery learning has marked effects on student cognitive and effective development and their learning rate. In general, mastery strategies enable about three-fourths of students to learn to the same performance standards as the top fourth of students learning.
under conventional group-based instructional approaches. The strategies seem to be especially effective for those students who typically have had problems learning under ordinary instructional conditions. For example, students with below average I.Q. scores seem to learn as well under mastery conditions as students with above average I.Q. scores under traditional approach. For subjects where most of the students have achieved the pre-requisite learning, mastery procedures appear to be able to almost eliminate the effects of individual differences on level of achievement.

Mastery methods also produce markedly greater interests in and better attitudes toward the material learned than more conventional approaches. They seem to help most students overcome feelings of defeatism and passivism brought to the learning. Their powerful affective consequences may be attributed to many factors, the most important of which seem to be the cooperative rather than competitive learning conditions, successful and rewarding learning experiences, personalized attention to each student's learning problems, and the use of certain correctives (e.g. student tutors and small group study sessions) which add a personal-social aspect to the learning not typical of group-based instruction.

Finally, mastery approaches also make student learning increasingly efficient. Master of the earliest units in a school subject appears to facilitate the learning of the subsequent units, especially where the learning units are
sequentially arranged. The instructional time spent to ensure adequate learning over the first units in the course seem to result in the need to spend less time than usual over the latter units to maintain a high level of student performance.

Traditional methods of rote teaching Accountancy has led to a majority of students using rote memory, making use of cheap notes and guides and turning to private tuitions. The academic standards in Accountancy are deteriorating and there is an urgent need to reform methods of teaching this subject. Effective methods that will develop spirit of enquiry, high self-concept, problem solving ability, independent thinking, establishing and studying relationship, analysing the data, are needed at once.

Classroom management problems, indiscipline problems, especially in Commerce classrooms are also due to faulty methods of teaching. Chalk and talk are the monotonous lectures of the teachers do not appeal to the senses of the students. Frustration and anxiety among students finds escape through anti-social behaviour, like truancy, stealing of notebooks, unattentive behaviour, class fights and abuses, and damage to class and school property. This is also justified on the ground that world has to-day become a global village. This has become possible due to foreign trade and exchange of manpower trained in financial affairs of the business. The need for this manpower is expanding at a rapid rate. Only effective methods of teaching Accountancy will help in production and exchange of such developed manpower possessing high achievement levels, well developed self concept, showing high degree of adjustment and using varied cognitive
styles suiting needs of the situation.

Further as reported in the Fourth Survey of Research in Education (1991) the effects of certain methods of instruction in different subjects e.g. Science and Mathematics have been studied on a variety of variables such as: achievement; level of thinking; concept attainment in Mathematics; reasoning abilities; general mental ability; attitude towards Mathematics; Mathematical creativity, knowledge, application aspects of learning; study habits etc. The methods tried out include: individualized instructions, lecture discussion, inductive discussion drill, Ausbel's and Bruner's strategies, expository guided discovery and pure discovery methods, programmed learning, activities and experiments, mastery learning etc. (Buch, 1991), Miyan (1982), Rao (1933), Patel (1934), Rajput (1934), Sastri (1934), Yadav (1934), Banalwanka (1935), Chakrara (1935), Kothari (1985) Rao (1936) have conducted investigations using the said approaches. But practically no work has been conducted to see the effectiveness of Inquiry Training Model of teaching Accountancy.

Jangira & Hooda (1933) developed Master Learning Model appropriate to the needs of Indian situations. Studies conducted by Mathur (1933), Hooda (1933), Singn (1933), Chand (1934), Yadav (1984), Patodia (1987), Vaidya (1939) have also tested the effectiveness of mastery learning model in Indian situations.

It is clear from the brief survey of researches conducted in India on the use of Inquiry Training Model and Mastery Learning Model that very little work has been done to compare the effectiveness of these two models in Indian situations and to adapt it to our peculiar needs. The need to compare the effectiveness of Inquiry Training Model and Mastery Learning Model in the teaching of accountancy particularly has not been attended to adequately. Since the subject is gaining importance in school curriculum, research to use Inquiry Training Model and Mastery Learning Model to improve students' achievement in Accountancy need to be conducted. Hence, the effectiveness of these two models on students' achievement, self concept, adjustment and cognitive styles call for an indepth study.
1.9 DELIMITATION OF THE STUDY

1. Study was delimited to students of +1 Class studying in Happy Higher Secondary School, Udhampur (J & K State).

2. Study was delimited to four units from the subject of Accountancy.

3. Study was delimited to three models i.e. inquiry training model, mastery learning model and conventional method of teaching.

4. Study was delimited in terms of treatment of 16 weeks.

1.10 ORGANIZATION OF CHAPTERS IN RESEARCH REPORT

Chapters of the present research report have been framed under seven chapters in addition to the Bibliography and Appendices.

Chapter I deals with the Introduction of the Problem taken for study. Chapter II deals with the conceptual framework of different variables. Chapter III deals with the review of related studies and hypotheses while Chapter IV deals with the development of achievement test in accountancy. Chapter V describes the method and procedure while chapter VI is devoted for data analysis, results and discussion. Chapter VII deals with the summary, conclusions and suggestions for further research.

Bibliography and appendices have been given at the end of research report.