CHAPTER - III

REVIEW OF RELATED STUDIES AND HYPOTHESES

Here an attempt has been made to present a review of related studies with a view to understand the general background of the problem undertaken. As the main thrust of the present investigation is to evaluate the inquiry training model and mastery learning strategy for XI grade accountancy, thus, the studies which have been conducted in this area have been collected as under:

3.1 Teaching Strategies

The quest for effective methods of teaching has attracted the attention of many a probing mind since a long time. Dating back from Plato's "Meno" which exemplifies the debate about teaching problems and takes up the Socratic technique of teaching, this quest has come a long way to current strategies of teaching. These strategies of teaching derive largely from behaviouristic cognitive and humanistic perspectives.

The objectives of teaching strategies by and large fall in the cognitive domain. When the studies took the context of classroom teaching, the samples were school children, while in the context of study at teacher-training level the samples were teacher trainees. The dependent variable in the two situations would be learning outcomes in specific subject areas, and learning outcomes in terms of skills and competence in teaching.
A teaching situation necessarily involves the teacher, learner(s) and the teaching-learning environment. (Mitzel, 1960).

The various teaching strategies may aim at certain common objectives and may therefore, by similar in expected learning outcomes but they may differ in their approaches to attain the specific objectives. Therefore, the various research studies reviewed may be classified on the basis of their approach. An operational basis of classification adopted may be (i) Model-based strategies; and (ii) other teaching strategies.

3.2 Model Based Strategies.

In first classification, the model situations are such in which the teacher interacts with students in a classroom, using instructional materials so that the students can achieve selected learning outcomes consisting of knowledge, attitudes and skills. A model of teaching is merely a tool for thinking about the teaching situation; it is a set of concepts carefully arranged to explain what teachers and students do in a classroom, how they interact, how they use instructional material and how these activities affect what students learn. The activities are considered in a sequence of the phases, ultimately learning to certain direct and indirect metacognitive abilities and attitudes among the learners. Each model guides us as we design instruction to help students achieve various objectives (Joyce and Weil, 1990).

The models of teaching usually adopted by the researchers are those developed by Joyce and Weil (1980). In the past few
years, research in the area of models of teaching has mainly seemed to be concentrated upon the information processing family.

The study (Jamini, 1991) which aimed to investigate the relative effectiveness of Advance organiser Model (AOM) and Concept Attainment Model (CAM) on conceptual learning efficacy and retention of Chemistry concepts in relation to divergent thinking indicated that although both AOM and CAM were equally effective in fostering concept learning, the AOM was comparatively more beneficial in concept learning to pupils with high divergent thinking while CAM was more beneficial to pupils with low divergent thinking. The AOM was found to be more effective than CAM in the retention of concepts irrespective of the level of divergent thinking of the pupils.

Another study (Sood, 1990) on comparative effectiveness of AOM and CAM for acquisition of language concepts in relation to cognitive style, intelligence and creatively reported that CAM was more effective than AOM in teaching of concepts in Hindi. Intelligence, creative levels and cognitive style were redundant factors so far as the learning of concepts were concerned.

Bhaveja (1989a, 1989b) in her two studies compared the effectiveness of CAM with Taba's Inductive Thinking Model in regard to the concept learning in biology and also analysed the thinking strategies used by the learners. The two studies differed in their sample population and elaboration. The findings were quite similar in the two studies supporting the role of inductive thinking processes in the process of conceptualisation and
generalisation.

Studies on Inquiry Training Model involved its comparison with the Concept Attainment Model. Singh (1990) found both the models equally effective in the teaching of physical science to class IX pupils. An elaborate three phase experimental study of CAM and ITM was conducted by Passi, Singh and Sansanwal (1991) under the guidance of Joyce, aimed strategy adopted for training application in Indian classroom conditions. This was a workshop-based study on development of training in CAM and ITM, which brought about significant favourable changes in the attitudes of both the teacher educators and the student teachers towards the models.

Pal and Misra (1991) studied the effectiveness of the Jurisprudential Inquiry Model in developing the social consciousness and the ability to solve social conflicts among pupils of Class IX. It was found that the individual Jurisprudential Inquiry approach was less effective than the group approach. The instructional and nurturant effects of JIM were studied by Pandey (1991); here the intelligence and socio-economic status of the pupils were found to be interacting with the development of certain values such as equality, tolerance and justice etc.

JIM was compared with CAM by Mohanty (1992) in development of moral concepts and judgement and the personal values of Class VIII pupils. The findings of the study indicated JIM
was more effective for developing the moral judgement and personal values of students whereas CAM was effective in developing moral concepts.

The effectiveness of synectic model in development of creativity in language was studied by Malhotra (1990). The students after being taught through this model showed more improvement on the factors of fluency, flexibility, originality and elaboration in the various areas of language skills. This improvement had a high positive correlation with intelligence level of the students.

Kumar and Kaur (1998) conducted a study on the effectiveness of inquiry training model in the development of process skills in Geography in relation to cognitive style and personality types. They took a sample of 400 female students of class IX divided into eight sections. In this study pre-test, post-test design was employed. The statistical technique employed for analysing the data were the measures of central tendency, ANOVA (2x2x2) and t-test. The findings of the study indicate that in the development of process skills in geography among class IX students (i) inquiry training model is a more effective method than the conventional method of teaching; (ii) teaching technique and cognitive style do not have any interaction effect; (iii) teaching techniques and personality type do not have any interaction effect.

3.3 Mastery Learning (Other Teaching Strategies)

Under second classification research on other strategies,
there were quite a number of studies which compared the various methods of teaching such as lecture, demonstration etc. (e.g. Ramani, 1989, and Narain, 1992). A study on the mastery learning approach on nursing tutors was done by Mathur (1988).

Besides model based strategies, there has been an attempt to investigate other teaching strategies (non-model) too. These strategies can be categorised on the operational criterion of objectives/approach. There were some studies on the method-based approach. The teaching strategies other than model-based were either experimental or survey-based. Hence, most of the studies focussed upon single-teaching strategy while a few studies compared the efficacy of various teaching strategies.

Research results on Mastery Learning Strategy to date are very encouraging. Comprehensive reviews of the research have been conducted by Block and Burns (1976), Bloom (1976), Dolan (1977-78), Burns (1979) and many others in India and abroad. Research findings give clear evidence that mastery learning strategy influences not only the cognitive domain but also the effective domain. When the student has mastered a subject and when he receives positive regard and recognition from others, there are profound changes in his view of himself and of the other world. Thus, by the use of Mastery Learning Strategy in our Classroom we are able to improve the self concept, achievement motivation, interest, attitude, etc. of an individual in addition to his academic achievement.

Thompson (1980) supported the mastery learning strategy as a highly favourable instructional component for enhancing
student learning. The educational implications of the findings of this study indicate that a mastery learning strategy can provide the highly favourable instructional component needed to promote equality in educational outcomes and to encourage individuality in student learning.

Yadav (1984) employed pre-test and post-test experimental design involving two groups of students to find the effect of Mastery Learning strategy on achievement of student in Mathematics. The experimental group was taught by M.L.S. & the control group by using the conventional method of teaching Mathematics. The design neatly controls all the factors, affecting the internal validity, namely, maturation, instrumentation, statistical regression and experimental mortality. The treatment was spread over twelve weeks. The sample was chosen for six high schools of Haryana consisting of the students of IX grades. The experimental group in different schools were taught by different teachers. The two comparison groups did not differ significantly in respect of intelligence, socio-economic status and previous knowledge in Mathematics.

Sethi (1985) has found that (1) the Keller and Bloom Mastery Learning strategies were equally effective in immediate test as well as delayed test in respect of the percentage of obtained scores, (2) The Keller and Bloom group did not differ in their mean performance at the two learning types (Comprehension & Skill) under investigation in immediate and delayed test, (3) The two strategies of mastery learning were not differentially affecting the performance for the two types of learning.
Guru (1986) found that (1) two methods of instructions (Bloom & Keller) were found equally effective, (2) The mastery learning strategies affected the achievement uniformity.

Kishore (1986) concludes that mastery learning strategy produces positive cognitive and affective change among students. Thus, mastery learning strategy can work as a viable alternative to the lecture model of instruction.

Lovullo (1986) conducted a study of the effectiveness of mastery learning/outcome based on strategies on the attitudes and achievements of sixth grade students. It was seen that the attitudes are not significantly enhanced as a result of difference in schooling (i.e. Mastery Vs. Non-mastery). It was found that the mastery model is a viable curriculum planning model for improving achievement.

Sullivan (1987) made a comparison of students achievement using mastery & traditional teaching methods. It was found that the test scores varied significantly according to the instructional method used. After one semester mastery group students scored significantly higher in Mathematics than the traditional group on Mathematics application, but significantly lower on maths computation. Full year gain scores, however revealed that the original mastery math group achieved significantly higher gains than traditional group in all scores.

Anderson (1988) studied the effect of mastery learning on algebraic achievement. The design of this study incorporated
what proposed to be the 'best evidence' for mastery learning. The experimental groups were taught for eighteen weeks under mastery learning conditions. The control group received traditional instruction. During the final week of the experiment, both groups were given a teacher made test as well as a standardized normative referenced test. Experimental groups performed better on the teacher made algebraic test than their control group counterparts. But no evidence was found to support the effectiveness of mastery learning on standardized test.

Salim (1989) studied the effect of M.L.S. on the chemistry achievement of secondary school students. The results of the study showed that the Mastery Learning students had significant achievement gains in Chemistry across all achievement tests.

Monger (1989) studied the effects of a mastery learning instructional strategy based on Bloom's theory of mastery learning on students' achievement. To identify difference in achievement a two group pre-test post-test design for each of the 3 grade levels, two, five and seven was used. Pre-tests were used as a control variable for initial differences in achievement. Post-tests were used to examine Mathematics achievements and related affects of learners. There was not significant difference between the achievement and subject related effect for second and fifth grades when adjusting for prior achievement. There was
significant difference between seventh grade students to mathematics concept and total mathematics, specifically the seventh grade control group outperformed the experimental mathematics, disconfirming Bloom theory in this case.

Kincaid (1991) studied the effectiveness of mastery based setting compared to a traditional lecture discussion setting in two developmental mathematics course of a two year college in Central Texas. In each course, the post test scores of those participating in the mastery-based setting were significantly higher than those in the lecture settings.

Sawhney (1993) studied the effectiveness of mastery learning strategy of teaching on acquisition and retention of algebraic concepts in high school students in relation to ability level, cognitive style and class organization. She found in her study that mastery strategy was superior teaching strategy in teaching algebraic concept to Class IX students. Above average and average ability students secured significantly higher score than the below average student irrespective of teaching strategy.

A number of studies reported by Block (1971), Block and Burns (1976) and Blooms (1976) have brought out the effectiveness of mastery learning strategy at all levels of education and in such different subjects as Arithmetic, Philosophy, Physics and Geography.

Block's analysis of 40 studies found that mastery learning enabled 75% of students to learn to the same performance of top 75% of students in conventional method.
Block and Burns (1976) reviewing literature on mastery learning found that in 97 comparisons of average achievement test scores, involving various types and number of students and various subject matter area, mastery taught students scored higher than non-mastery taught students 89% of the time and significantly higher 61% of the time.

Yung Ming Tse (1983) attempted to investigate the hypothesis that a mastery learning method in teaching introductory accounting would (1) increase accounting achievement scores and reduce drop-out rate. The results revealed that the differences between control and experimental groups with respect to achievement and drop-out rate were insignificant. However, Soto (1983) obtained opposite results.

Yadav (1984) attempted to examine the effects of mastery learning strategy on students' attitude towards mathematics and their self-concept. It was found that there was significant improvement in the self-concept of experimental group. Vaidya (1989) also obtained similar results in the subject of Hindi.

Anuforo (1987) investigated the effects of mastery learning technique on students' achievement in the study of English language syntax and recommended the use of mastery learning technique as a better method of teaching English language syntax.

Studies on effectiveness of the mastery learning programme were conducted to investigate its effect on the achievement, self-concept and attitude of pupils towards statistics (Mathur,
1988) and Hindi (Vaidya, 1990), respectively. The sample taken in the former study consisted of students while in the latter the sample comprised students of Class VI. Vaidya (1990) compared Mastery learning strategy with CAM and the Traditional Method. The findings of Vaidya's (1990) study indicate that MLS was more effective than CAM or TM in (i) facilitating learning and enhancing the achievement level and (ii) improvement in self-concept and attitude towards the subject. Mathur (1988) also found MLS as effective strategy in terms of achievement, self-concept and attitude towards statistics for both undergraduate and post graduate students. Mathur (1988) study also established the effectiveness of MLS in reducing the gap between repeaters and non-repeaters.

Sharma (1991) compared the effect of various modes of classroom teaching involving video-based instruction, teacher discussion, demonstration, self-experimentation etc. on the achievement in science of the secondary level learners. The conclusions drawn favoured most the video-based instruction while self-experimentation under the guidance of the teacher was found to be least effective of all the models.

Sangwan (1992) in her study on VI class students revealed that at the end of experimental treatment the group of pupils taught science through mastery learning strategy have significantly higher gain score on the criterion test in science than the group of pupils taught through conventional method. Similarly,
experimental group achieved significantly higher mean score on the test of self-concept than the group of pupils taught through conventional method. Again experimental group scored significantly lower on the test of adjustment than the group taught by conventional method and hence the adjustment level of experimental group was better than control group.

Bajaj (1994) in his study on the effect of mastery learning strategy on the teaching of Geometrical Concepts for sixth grade students concluded that the groups of students with above average, average and below average intelligence do not differ significantly in their performance in Geometry.

Varughese (1998) emphasised the need for improving the quality of instruction by concluding that mastery learning strategy is a powerful idea to shape. Further 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.

Sharma (1998) studied the effectiveness of mastery learning strategies in comparison to conventional strategy in respect of performance and also studied the relative effectiveness of mastery learning in relation to stress level of students and three learning types in concept learning, rule learning and problem solving. It employed two 3x3x3 factorial design - one for achievement scores and other for retention was carried out on scores. The research/students of class IX of age range 13 to 15 years. The final sample comprised of 277 students, 103 student's
from Bloom's Mastery Learning strategy, 97 students from Keller's Personalized system of instruction and 77 students from the control group were selected for the final sample. Findings were - three stress level groups showed comparable achievement gain scores, no interaction was found between treatment and stress level for the achievement gain scores, Bloom's mastery learning strategy yielded higher achievement gain scores than conventional instruction, Keller's personalized system of instruction yielded higher achievement gain scores.

Bajpai (2000) conducted a research study on 100 commerce students from class XII studying in commerce group selected randomly from tribal district of Jhabua in Western Madhya Pradesh. The sample consisted of 50 subjects in experimental group and 50 subjects in controlled group. The research was conducted with the objectives of comparing mean scores of students studying through programme learning and lecture method and also to study the effectiveness of programmed learning method in terms of achievement of Applied economics of commerce students. The same content (30 units) was taught through lecture method to the controlled group in thirty working days and through programmed learning method to the experimental group in thirty working days. The achievement scores of controlled and experimental group were collected before and after applying the lecture and programmed learning method.
The experiment proves the effectiveness of programmed learning method in teaching applied economics at plus two stage. Programmed learning methods have been found significantly superior as compared to lecture or traditional method of teaching.

If one looks at the Fourth Survey of Research in Education (Buch, 1992), the research on teaching strategies was a part of the chapter on Research in Training and less than twenty studies were reviewed under this section. In the Fifth Survey of Educational Research (NCFRT 1997) there is a separate chapter, reviewing forty-four research studies on teaching strategies. This is undoubtedly a patent indicator of the momentum gained by the research on teaching strategies. It is now being increasingly realised that teaching processes do form the core of the educational process as a whole. Therefore, they need to be probed deeper and they do have a lot of scope for probing. Moreover, most of the studies have been done in the area of sciences and language, whereas there is a scope in the area of Commerce i.e. accountancy.

**HYPOTHESES:**

1(a) There will be no significant difference in the mean achievement score of students taught accountancy through inquiry training model before and after the treatment.

1(b) There will be no significant difference in the mean self-concept score of students taught accountancy through inquiry training model
before and after the treatment.

1(c) There will be no significant difference in the mean adjustment score of students taught through inquiry training model before and after the treatment.

1(d) There will be no significant difference in the mean cognitive style scores of students taught through inquiry training model before and after the treatment.

2(a) There will be no significant difference in the mean achievement score of students taught accountancy through mastery learning model before and after treatment.

2(b) There will be no significant difference in the mean self-concept score of students taught accountancy through mastery learning model before and after treatment.

2(c) There will be no significant difference in the mean adjustment score of students taught through mastery learning model before and after treatment.

2(c) There will be no significant difference in the mean cognitive style scores of students taught through mastery learning model before and after the treatment.
3(a) There will be no significant difference in the mean achievement score of students taught accountancy through conventional method before and after the treatment.

3(b) There will be no significant difference in the mean self-concept score of students taught accountancy through conventional method before and after the treatment.

3(c) There will be no significant difference in the mean adjustment score of students taught through conventional method before and after the treatment.

3(d) There will be no significant difference in the mean cognitive style scores of students taught through conventional method before and after the treatment.

4(a) There will be no significant difference in the mean achievement scores of two groups of students taught accountancy through inquiry training model and the group of students taught through conventional model after the experimental treatment.

4(b) There will be no significant difference in the mean achievement scores of two groups of students taught accountancy through mastery learning model.
and the group of students taught through conventional method after the experimental treatment.

4(c) There will be no significant difference in the mean achievement scores of two groups of students taught accountancy through inquiry training model and the group of students taught through mastery learning model after the experimental treatment.

5(a) There will be no significant difference in the mean self-concept scores of two groups of students taught accountancy through inquiry training model and the group of students taught through conventional method after the experimental treatment.

5(c) There will be no significant difference in the mean self-concept scores of two groups of students taught accountancy through mastery learning model and group of students taught through conventional method after the experimental treatment.

5(c) There will be no significant difference in the mean self-concept scores of two groups of students taught accountancy through inquiry training model and the group of students taught through mastery learning model after the experimental treatment.

6(a) There will be no significant difference in the mean adjustment scores of two groups of students taught accountancy through inquiry training model and the group
of students taught through conventional method after the experimental treatment.

6(b) There will be no significant difference in the mean adjustment scores of two groups of students taught accountancy through master learning model and the group of students taught through conventional method after the experimental treatment.

6(c) There will be no significant difference in the mean adjustment scores of two groups of students taught accountancy through inquiry training model and the group of students taught through mastery learning model after the experimental treatment.

7(a) There will be no significant difference in the cognitive styles of two groups of students taught accountancy through inquiry training model and the group of students taught by conventional method after experimental treatment.

7(b) There will be no significant difference in the cognitive styles of two groups of students taught accountancy through mastery learning model and the group of students taught by conventional method after the experimental treatment.

7(c) There will be no significant difference in the cognitive styles of two groups of students taught by inquiry training model and other group of students taught by mastery learning model after the experimental treatment.

8. There will be no significant difference in the effectiveness of three teaching models/methods in terms of students achievement in accountancy.