CHAPTER V

CONCLUSION AND IMPLICATIONS

5.1 Conclusions
5.2 Educational Implications
5.3 Suggestions for Further Research
5.4 Limitations
In order to determine the information processing strategies adopted by children taught through traditional method and through concept attainment method in acquiring science concepts, data was analysed by using appropriate statistical techniques and the results have been discussed in the previous chapter. This chapter includes the outcome of the experiment based on the findings of the study or by testing the hypotheses as per objectives formulated for the study and the results and conclusions drawn from them. It also discusses implications of the study and suggestions for further research in the area.

5.1 Conclusions

As mentioned in chapter III and chapter IV, the results have been drawn keeping in mind the objectives of the study and by testing of hypotheses formulated thereafter. Major findings of the study drawn out of the foregoing chapters, are as follows.

1. Concept attainment model of teaching is significantly more effective as compared to traditional method of teaching in terms of pupils' scholastic achievement.

2. Concept attainment model of teaching is significantly more effective as compared to traditional method of teaching in developing information processing strategies that the teaching method does not affect the information processing strategies adopted by children.
3. Scholastic achievement of boys and girls did not differ when taught through concept attainment model.

4. Socio-cultural status was found effective in terms of pupils' achievement.

5.2 Educational Implications

Formal education is a necessity in a complex society, where the young cannot learn all that is required for existence in this adults world. Learning cannot be complete by observing and imitating adults. The young must be taught and there should be a theory of instruction which they should follow for higher order learning.

In this study, the school education was undertaken on Burners model of teaching. The data was gathered from the pupils compiled and statistically analysed. It proved the effectiveness of Burner's concept Attainment Model of Teaching.

In the present days, with a rapidly changing education scenario, the role of teacher and the teaching are changing fast. Process skills are finding a prominent place in the system and so is the development of mental processes. Science education is spreading its roots in the name of scientific literacy, encroaching into the whole educational systems touching all disciplines. Thus, the present study has several implications for all those who have interest in research and innovation in the field of science teaching, in particular and teaching, in general. So, it can be said to have implications for teachers, teacher educators, administrators and research workers. It will be worthwhile to present some of such implications here:
1. Model of teaching need to be introduced for teaching of science as they have significant effect on bringing about desirable changes among the students along with better learning. This is also supported by the finding that certain models are more appropriate to particular subjects (Brady, 1985).

2. The study has implication for education to suggest how concept attainment model could be used to teach concepts effectively.

3. Teachers can make their teaching more meaningful while teaching concepts through concept attainment model.

4. Teachers also need to be trained in the models of teaching, specially the CAM, so that they are able to develop tasks in their subjects according to this model.

5. The models of teaching as a theory-cum-practice programme could be integrated into methods of teaching at training courses.

6. "Science for All" and "Science Literacy" needs an important strategy of teaching to be developed to ensure learning of the total instruction by all the pupils. The models of teaching are alternate forms to "Learning by Doing" or "Child-centered Approach", as the students are involved in the whole lesson. The concept attainment model of teaching is interactive and participatory in approach.

7. Concept attainment model is easily applicable in Indian classrooms because they are based on no other technology except the technology of developing instructional materials.
8. Teacher education programme in India should incorporate training for variety of models of teaching so that tomorrow's teachers are more rational and flexible in selection and use of a teaching strategy suitable to pupils and their needs. The impenetrability of this model of teaching an experimentally tried and field tested.

9. Concept attainment model is effective teaching strategy in enhancing scholastic achievement of learners.

10. Concept attainment model is a better transactional approach for in-service, teachers. Therefore, the in-service teachers need to be oriented time to time through this model for improvement of teaching skills.

11. Designers of instructional material should develop the material in such a way that understanding of different concepts and principles takes place at a faster rate in students.

12. Equality of learning opportunity can be a goal of education rather than equality of learning outcomes. Such a goal suggests that teachers must find ways of giving each child the help and encouragement he needs. A learning environment must be created during teaching where concept attainment model of teaching plays an important role.

13. Models of teaching approach focuses at integrating the context and methodology skills in relation to specific instructional objectives. Therefore, for effective use of CAM. A study like the present one is very important. The use of this model involves formulation of objectives, content organisation, sequencing, analysis, presentation and the like.
14. Teachers also need to be trained in the application of concept attainment model appropriately according to the need of their class.

15. The findings of the study imply that it is highly desirable to teach science through concept attainment model while developing information processing strategies among students.

5.3 Suggestions for Further Research

With a rapid expansion of knowledge in science subjects, now it is a challenge to science teachers of today to evolve new teaching strategies that may help the students to acquire more scientific concepts within the shortest period of time and in a better way. Therefore, the need for effective teaching of science cannot be ignored. But, with our present methods of teaching, neither process objectives nor even content objectives are fully realized. Researches in this field are almost negligible.

Based on the experience of the researcher, the following suggestions are made for future researchers in the area of information processing strategies and models of teaching:

1. Researches may be conducted to test the workability and feasibility of various models of teaching so that with certain modifications they can be effectively and frequently used.

2. The study may be replicated for various grade levels and for different topics in science to test the generalization of the results and conclusions of this study.

3. The nurturant effects of the CAM could be studied along with their instructional effects.
4. Attainment of the objectives of science may be studied through concept attainment model of teaching.

5. Different models can be tested and validated with the help of variables of different domains, viz. cognitive, affective and psychomotor domains.

6. Possibilities of replacing the methods of teaching by models of teachings may be worked out.

7. The syllabus of various subjects may be evolved through studies on the lines of concept attainment model.

8. Different models of teaching can be analyzed in terms of specific teaching and training skills.

9. The researches could be conducted on the perceptual changes in the students, on being taught through CAM, using different scales.

10. The use of models of teaching to the education of various disadvantaged groups, handicaps, gifted and the like may be helpful.

11. Studies can also be undertaken to study the effect of Bruner's concept attainment model on low and high intelligence students.

12. Role of positive and negative exemplars in identifying the concept could also be studied.

13. The research could be conducted to see whether the mode of reasoning (inductive and deductive) enhanced, when taught through Bruner's concept attainment model of teaching.
14. Studies may also be undertaken to study the comparison of Bruner's and Piaget's approach to child development in learning by concepts.

15. The role of age and intelligence in concept attainment by induction can also be probed.

16. Studies may be conducted to find out the loss of learning suffered by the various categories of pupils taught through CAM at different interval of time. Similarly, studies comparing the loss of learning suffered by the various categories of pupils taught through different models of teaching concepts may also be undertaken. The thrust of such studies would be to assess the learning through the various models/strategies for concepts and their relative efficiency in terms of retention over varying periods of time.

17. Studies may be designed to find out the strategies used by the students and the teachers when exposed to CAM while gaining understanding of new concepts on their own.

18. Of the three CAM, most of the research studies have been conducted on the reception-oriented model. Research studies need to be undertaken in the area of other CAM too.

19. Studies may be undertaken to find out the preferences of the different categories of students for CAM vis-a-vis other models. Similarly, studies comparing the preferences of the different models of teaching concepts may also be undertaken.
5.4 Limitations

1. The sample of the students could not be very large because Kaufman Assessment Battery is an individual test with eight subtests and it is very difficult to administer the test on large no. of students.

2. The study was delimited to the subject of Biology.

3. The experiment was conducted on secondary school pupils.

4. The sample selected for the study was not a random sample. It was a purposive sample.

5. Specific external variables beyond the control of the researcher might have a stimulating or disturbing effect upon the performance of the learners.

6. No deliberate attempt was made to prevent, out of class or peer group interaction among different groups.