

## **SUMMARY AND CONCLUSION**

## **Chapter: VI**

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The work incorporated in this thesis entitled ‘‘A Comparative Study On The Effectiveness Of Lecture Cum Demonstration Method, Inquiry Method And Laboratory Method For Teaching General Science In Secondary Schools’’ .The research studies has been broadly divided into six (6) chapters.Chapter 1 is ‘Introduction of the Study’ which deals with progress of science education in different parts of the world along with our country, India. Importance of selecting an appropriate method for teaching general science at the secondary level and to achieve the goal of science teaching, what process can be adopted are discussed briefly.The main objective of the present study was to find out the effectiveness of the three different methods of teaching general science at the secondary level namely, lecture cum demonstration method, inquiry method and laboratory method. It attempts a comparative study of the effectiveness of these methods of teaching general science. Further the study investigates the relative effectiveness of these three methods in relation to type of management, locality and academic board or certificate and also problems faced by the teacher in teaching general science by using different methods in schools.In order to achieve these objectives six (6) hypotheses were formulated for testing.The study is delimited to sixty (60) secondary schools of undivided Kamrup district (merto and rural). Out of sixty (60) selected schools fourty eight (48) government and twelve (12) private schools, of which thirty three (33) belong to urban area and twenty seven (27) from rural area.

Chapter 2 deals with the ‘review of related literature’ on the present research study.The reviews are classified and reported in three different categories-studies conducted outside India, studies done in India and studies done in North Eastern Region of India.

Chapter 3 deals with 'materials and methods' of the present study. It includes nature of educational research and its various methods, population, sample, tools and experimental design of the study along with procedure of data collection. The study is conducted by adopting two research methodologies, namely experimental and descriptive survey method. Experimental method is used for studying the first five objectives of the study and descriptive survey method is used for the sixth objective. The population of the study consisted of all the teachers and students of secondary schools of undivided Kamrup district (Rural and Metro). In selecting the school for the study, stratified random sampling method was adopted and a total number of 60 schools (27 from rural and 33 from urban area), 3069 students studying in class X standard and 76 teachers teaching science at the secondary level are included in sample. Pre-test and Post-test design was considered as the most appropriate design for the study. Accordingly as tool for the study, a Pre-test was prepared to test previous knowledge of the students and a Post-test was prepared to study the achievement level of the students after teaching by three different methods. The achievement scores of the post-test was used to compare the effectiveness of one method over the other. A structured Interview schedule was used to find out the problems faced by the teachers in using different methods of teaching general science.

Chapter 4 deals with 'results' i.e. analysis and interpretation of data. The data has been carefully analysed quantitatively in the light of pre-fixed objectives with the help of different statistical techniques (Fisher, 1944). Results showed the effectiveness of different methods (Table 3-29). Findings reflected the effectiveness of methods and teachers' views regarding the use of methods in teaching general science. Chapter 5 deals with 'discussion' i.e. Supportive views regarding the use of modern methods and attitude towards science teaching.

Chapter 6 deals with 'summary and conclusion' i.e. improvement of general science teaching by the use of different methods at secondary level.

After getting the findings the following conclusions could be arrived at-

1. The effect of traditional method and modern method has an influence on the teaching –learning process of general science in the secondary level.
2. All the three different methods, namely; Lecture Cum Demonstration, Inquiry and Laboratory Methods are effective in teaching general science. However, Laboratory is the most effective method.
3. The effect of teaching on different groups of students A, B and C by three different methods were found to be significant but the modern methods i.e. Inquiry and Laboratory Methods are more effective and promoting than the traditional method i.e. Lecture Cum Demonstration method in teaching general science.
4. Out of the three pair of Mean scores of methods i.e. Lecture Cum Demonstration and Inquiry, LectureCum Demonstration and Laboratory, Inquiry and Laboratory methods, it is found that the pair of Lecture Cum Demonstration and Inquiry Methods is the best combination.
5. Out of the two types of management, teaching general science at private secondary schools is better than the government schools.
6. Out of the two types of locality, teaching general science at secondary schools of urban area is better than the schools of rural area of Kamrup district of Assam.
7. Out of the three types of board and certificate, teaching of general science under ICSE is better than the secondary schools under CBSE and SEBA.
8. It is found that 99% teachers are energetic and competent which gives hope to a bright future for science education in this region. But due to non-availability of scientific apparatus, in some schools the teachers are not interested to ‘demonstrate’ in the normal class room situation though they are well acquainted with lecture-cum demonstration method.

9. Majority of the teachers (93.37%) are in support of developing inquiring attitude among the students which develop problem solving attitude in their practical and real-life situation.
10. Almost all the teachers (92.05%) are satisfied with the behavioural change of students after individual performance in laboratory.

In conclusion the investigator wants to suggest some measures regarding teaching general science at secondary level.

The chief causes for poor performance of Science Students are:

1. In some government schools conditions and facilities of science laboratory is not adequate or sufficient. It is very important that Government should provide laboratory facilities to each and every school of Assam.
2. The ad-hocism in school administration i.e. a large number of secondary schools are managed by Principal/ HeadMaster i/c, which has indirect effect on poor performance of students and growth of fear psychosis in minds of students towards science subject (COBSE,2007).
3. Another factor that causes the poor performance of students in general science is innumerable 'Bandhs' that disrupt the smooth functioning of the schools, and practically the students are suffered. The effect of Bandhs is enormous in schools located at rural area.
4. The role and influence of syllabus is another factor, i.e. the teachers are interested to complete the course within the time. Students are not subjective based only. The dearth of teachers, not to speak of trained teachers, are not active in use of methods appropriately. Active teachers can motivate the students towards the science stream. Little effort is made to reach the root of student's difficulty and thus some teachers are not able to develop the basic concept and skills of general science among the students.
5. Science Stream should be opened in the B.Ed.colleges for training of science teacher at secondary level as it is not enough in numbers. They

should be trained under suitable resource persons. So that they bring forward the strategy for teaching general science at secondary schools.

Some Suggestions are given below:

1. There is a need of regular monitoring system in respect of laboratory conditions or management.
2. The provision of supervision or inspection in case of teaching-learning process of general science should be implemented.
3. Science teacher should use proper method in an effective way in teaching general science at secondary level. It will help the students to manipulate the skills and application of knowledge in real life situation.
4. Provisions of teachers' refresher programme or short term training should be given to change the attitude of the teachers. The training should be activity based and it should not be in cascade mode. Training should be able to generate the required skills and knowledge at each training site.
5. Provisions of reward for creative ideas /innovative work of teachers or taught or common people should be recognized by Government/ non government organizations and agencies.
6. To fulfill the aims and objectives of science education, inter-disciplinary or multipurpose activities should be given to the research scholars. Fellowship/scholarship should be given to the research scholars of any categories for the benefit of science as well as society.
7. All the teachers should show proper attitude and enthusiasm towards the use of proper methods for teaching General Science. So that proper enthusiasm can be developed for future generation. As Kothari Commission opined "The destiny of a nation is being built inside the class-room."
8. It can be suggested that, the three methods viz, Lecture Cum Demonstration method, Inquiry method and Laboratory Method, can be used in teaching General Mathematics for the benefit of the secondary school students.