CHAPTER V
DISCUSSIONS OF FINDINGS, CONCLUSION AND SUGGESTIONS

5.1 INTRODUCTION

This chapter is based on the discussions of major findings and suggestions given by the investigator.

5.2 DISCUSSIONS OF FINDINGS

Major findings of the study are arranged systematically based on the objectives of the Study. The following are the findings of the Study.

I. Attitude towards Science of Class IX Students on the basis of Sex and Management.

a) Sex: The finding reveals that majority of the male students are having Moderate Favourable Attitude towards Science Subject. The reason may be because male students are not well motivated towards the subject and are more interested in other activities and remain restless during the class hour which may reflect in their Attitude towards the Subject. Female students on the other hand are having High Favourable Attitude towards Science in comparison to boys. The reason may be that female students are more attentive and interested in learning. The present finding refutes the findings of Jovanovic and King (1998) in their study “Boys and Girls performance-based science classroom” which reveals that the male students are having more positive Attitude towards Science than the female Students. The present study also disprove the study of Singh (1986) who revealed that there had no difference in the mean scores between boys and girls in their Attitude towards Science Subject.

b) Management: It can be observed that the Attitude towards Science in relation to different management were more or less similar in the case of Government and Deficit schools. However, the Attitude towards science of the private school students is slightly higher than the students studying in government and deficit school. 57.6% of students have High Favourable Attitude towards Science. The probable reason could be that the teachers of Government Schools are not supervised at all by the head of the institution which encourages them to be absent
from duty and irregular in taking their classes. Thus affecting the Attitude of Students.

In the similar study titled “A Study of problems of Science education and Attitude of students towards Science in High School of East Khasi Hills” conducted by Rani (1996) different results was found out where the science attitude score of government and deficit schools did not show any difference in their mean score but the deficit and the private schools showed difference in their mean score.

II. Achievement in Science of Class IX Students on the basis of Sex and Management

a) Sex: It can be observed that 50% female students fall in the high Achievement level of Science in comparison to only 24.5% of male students. 58.2% male Students fall in the moderate level in comparison to 46.4% of female students. 17.3% of male Students fall in the low level of Achievement in comparison to only 3.6% of female students. The reason may be that female students have a high favourable Attitude towards Science than their male counterpart. This finding is in accordance with the finding of Ferreira (2003) in his study “Gender issue related to graduate attrition in two subject departments” revealed that Attitude of the Students towards Science were reflected in their achievement in science. The result of the study declared that Attitude of the Students towards Science was reflected in their Achievement in Science.

b) Management: It can be observed that majority 57.6% of the students of Private schools have High Favourable Attitude towards Science, 60.8% of students of Deficit schools have Moderate Favourable Attitude towards Science and 19.3% of students of Government schools have Low Favourable Attitude towards Science. The reason may be that the students of private schools are well motivated by their teachers, good tutorials from teachers and regular classes and assessment of performance.
III. Difference between Class IX Students in their Attitude towards Science on the basis of Sex and Management.

(a) Difference between Male and Female Students in their Attitude towards Science.

The science attitude scores of the male and female students show no statistical significant difference with t value of 0.07 not significant at 0.05 level or 0.01 level of confidence. This indicates that sex does not determine science attitude. Thus the above computed t value indicate that there is no significant difference in the attitude towards science among the male and female students of class IX of Tura Town. This finding is in accordance with the findings of Lalblakdiki (1985) in “A Study of the Attitude of Standard IX High School students in Aizawl District towards Science” who found that there is no significant difference in the attitude towards science among the male and female students. Rani (1996) in his study titled “A Study of problems of Science education and Attitude of students towards Science in High School of East Khasi Hills” also found that there is homogeneity in the attitude of male and female students towards science subject as the two groups failed to differentiate in their mean attitude score.

(b) Difference between Students of different Management System in their Attitude towards Science

There is a significant difference between students of Government and Deficit school in their Attitude towards Science with the Deficit school students having better attitude than the Government school students. Further, there is a significant difference between students of Government and private schools in their Attitude towards Science with Private school students having better attitude in Science. There is significant difference students of Deficit and Private school in their Attitude towards Science with the Private school students having higher attitude towards Science.

Among the three management, students of Private school have better attitude towards science that Deficit and Government School. The reason may be that the teachers in private schools are better and are bound by their duties. Though they are less paid, they are supposed give their best for obtaining good results of Students which contribute to the prestige of the school and also to community at large.
Whereas in case of government and deficit schools, though having well trained and qualified teachers and their salary being fully or partly funded by the government and their job being secure, the teachers do not show interest in taking the classes regularly or with great zeal which affect the students. The probable reasons may also be that the teaching strategy followed by different management system is different. Also the Attitude of teacher’s towards the subject may be the reason, motivation to teach and job satisfaction as some of the teachers do teach only for the sake of teaching. Rani (1996) in her study titled “A Study of problems of Science education and Attitude of students towards Science in High School of East Khasi Hills” found out that there has been a significant statistical difference among the students studying in government and private and deficit and private schools but there had been no significant difference between the students studying in government and deficit.

IV. Difference in Achievement in Science of class IX Students in Relation to Gender and Management

a) **Sex:** It has been found out that the science achievement score of male and female students shows a significant difference. The mean achievement scores of male are greater than that of female students. Although majority of the boys have moderate level of Achievement yet when compared have found to be better than female students. The probable reason may be that the boys have better reasoning ability and can grasp and learns faster than the female students. Simpson and Oliver (1990) in their study also found there is a significant difference in Science achievement among male and female students and showed that the achievement in science was higher among the male students when compared to female. Jordon (1959) also found that there was a significant sex difference of science achievement, the mean scores being in favour of the boys. On the other hand the research conducted by Misra (1986) academic performance of girls was superior to the performance of the boys.

b) **Management:** The findings revealed that there is a significant difference in achievement in science between the students studying in government and deficit schools with the mean scores being in the favour of the students of Deficit schools. Further, there is a significant difference in achievement in science of class IX students of government and private schools with the mean scores being in favour of
the private schools. There is a significant difference in science achievement of class IX students of Deficit and Private schools with the mean score in favour of private schools.

It is observed that students of Private School have better Achievement in Science than the students of Government and Deficit Schools. The probable reason may be attributed to the role played by teachers. The Private schools have teachers who are more sincere and hardworking and put in a lot of effort to ensure that their wards understand the subject and perform well. Further, the Government schools have well qualified teachers yet are not motivated to take up the profession seriously. The Deficit schools are better in their Achievement in Science in comparison to Government Schools may be because their schools are not run fully by the Government and therefore have to put in their sincere effort and hard work so that their students do well.

This finding differ with the finding of Prakash (1968) in his study “construction and standardization of an achievement test in everyday science for class VII of Punjab” which shows that science achievement of pupils from government schools was found better than that of deficit and private schools.

V. Relationship between Attitude towards Science and Achievement in Science.

It has been found out that the relationship between Attitude towards Science and Achievement in Science was positively and significantly correlated \((r = 0.34)\). The reason may be that with the increase in the Attitude towards Science there will also be an increase in the Achievement in Science. This finding is in line with the finding of Hough and Piper (1982) in their study titled “the relationship between Attitude towards Science and Science Achievement” which shows the correlation between Attitude and Achievement in Science was 0.45 which is positive and significant. Similarly, Freedman (1997) in his study “relationship among laboratory instruction, attitude towards science and achievement in science knowledge” revealed that there was a significantly positive correlation of students’ Attitude towards Science with Their Achievements. It is clear from the above discussion that Attitude towards Science is positively correlated with the achievement of students of science.
To conclude, the present study has shown that there is a relationship between Attitude towards Science and Science Achievement of Class IX Students. It reveals that sex in not a factor related to science attitude. However the management system can play as an important factor in the Attitude of Students towards Science. It has been found out that there is a significant difference in Science Achievement between the Students Studying in Government and Deficit Schools, Government and Private Schools and Deficit and Private Schools. The study also revealed that sex and schools management has significant bearing on achievement In Science and Attitude towards Science of Class IX Students. Thus, It Can Be Concluded That A Positive Attitude Towards Learning Of Science Would Enhance The Achievement in Science. As Such it becomes very important for Schools to foster Good Attitude towards Learning Science among Students for Their Effective Performance in Science.

5.4 EDUCATIONAL IMPLICATIONS

The need to reform science education was felt in all countries of the world more or less simultaneously immediately after Second World War. The present study has brought out certain salient finding, which if proper attention is given will help in the promotion of the quality of science education in the high schools of Tura Town. Only on the firm foundation of school education, qualitative improvement in science subject is possible. For this the government should take immediate steps to appoint regular science teacher who are qualified and trained to teach the students. In the present study it has been found out that science achievement of the students were found positively related to their attitude towards science. In order to uplift science education, new school curriculum should be planned and implemented focussing on uplifting the science education as it is really important to make the students know that science is more than what they used to read in their books. As educator, parents and mentors, it is our responsibility to take science beyond the pages of the book. By developing creative and innovative lesson plan that demonstrate the cause and effect of science, we can bring science live to our children. The need for achievement in science has been greatly felt in every field because it is the major focus for academic growth.
5.5 SUGGESTION

Today, we are living in a society completely drawn into the scientific environment. Science speed and success sum up the passive and pursuit of life. One cannot imagine about the world without science in the present time. Science and technology are closely related with our lives. The achievements of today’s scientific world have indeed glorified the modern world and have transformed the modern civilization into a scientific civilization. There are so many areas in which Science plays an important role. The first is in everyday human life. Thanks to the advances in the biomedical fields there is less infectious or lethal disease than ever before. Some illness that would be death sentences even just twenty years ago with advanced research into the study of bacteria and viruses are now becoming manageable and in some cases have even eradicated. People are now living longer as we understand more about aging and the nutrients need to keep the body healthy and active. Another great area where Science is proving itself is industry. In industry new materials are being discovered everyday that will help technology make huge leaps. Through science man could satisfy his intellectual, cultural, moral, aesthetic and vocational needs. However, the qualities imbibed by learning science are of great value to a citizen living in a society and thereby comes a need of science education.

One of the major factors for the success in science education is the favourable attitude of students towards the subject. In order to develop favourable attitude in the students towards science, the following suggestions are made.

1. The science teacher can act as an artist to instill in his pupils scientific attitude which he can do by manipulating various situations that infuse among the students such characteristics. Learning of science should be to large extent explorative. Students may be made to participate in doing some experiments on his own as it is sure that scientific attitude develops when the learning is based upon first hand experiences.

2. Children are very curious in nature to know about the ‘why’ and ‘how’ of all phenomena and events. Opportunities should thus be provided to satisfy and nourish this instinct by encouraging the children to ask questions and they should be given opportunity for close observation, experimentation for things
and events for carrying them ahead in the satisfaction of their curiosity. In addition to this, school library should be well maintained. School library should have up-to-date relevant and interesting books and journals on science. Popular science magazines should be subscribed by the school for supplementary reading. The school should also have a trained librarian.

3. Activities related to science were found to have positive attitude in inculcating science attitude among the students. Thus various co-curricular activities like organizing science club in the school, science society, photographic club, etc, should be made to integrate co-curricular activities along with science education. It should be properly organized by the science teachers but not forgetting that students should be given enough freedom to plan their activities. Organizing science quiz competition, science exhibition, science seminar and scientific tours also can be made as it also helps the students in inculcating positive attitude towards the science subject.

4. Laboratory in school should be well equipped with the sufficient apparatus needed for experimentations and adequate chemicals. The students should be encouraged to do experiments independently under the supervision of the teacher. This will help in developing the scientific skills among the students.

5. The science curriculum should also fit the needs and interest of the students. The curriculum should intend to impart a broad understanding of the science subject in it.

6. Personal examples of teachers are perhaps the single greatest force that is helpful in inculcating scientific attitude among its pupils. Thus he should be truthful, open-minded and should have faith in cause and effect relationship.

7. Superstitions are great stumbling blocks in the path of developing positive attitude towards the subject among the children. Children at their tender age are very easily influenced by the baseless believes and superstitions spread among the elders in the society. The teacher can make out a tentative lists of such false believes and ask his students to test the validity of these believes by collecting relevant evidences and proofs mainly based on their self-observations , experience and experimentation.

8. In order to make science teaching more effective and interesting such that the students will inculcate positive attitude towards the subject, the classroom, science laboratories and other places should be well loaded with a sense and
spirit of scientific environment. The students should have freedom to carry out their own desired experiment in the laboratory.

9. Every school should organized Science fair at least once a year which will include science exhibition among the students as well as demonstration talks by the experts, film shows on scientific topics, debates and declamation contest, scientific play, etc.

10. Teachers Attitude and sincerity in their work is essential to instill healthy attitude towards Science Subject among the students.