5.0. Introduction

This chapter is concluding chapter of these findings, interpretations, recommendation and educational implications and scope of the further research are described.

Once the research data have been collected and the analysis has been made, the researcher can proceed to the stage of interpreting the data. Interpretation refers to task of drawing inferences from the collected facts after the analytical study. In fact, it is search for broader meaning of research findings.

According to Carter V. Good (1994) “The process of interpretation is essentially one of starting what the findings convey, what is their significance and what is the answer to the original problem”.

According to Lokesh Koul (1997) “Interpretation calls for a careful, logical and critical examination of the sample chosen, the tools selected and used in the study”.

In one sense, interpretation is concerned with relationship with in the collected data. Interpretation also extends beyond the data of the study to include the results of other researches, theories and hypotheses. Thus, interpretation is the device through which the factors the seem to explain what has been observed by the researcher in the course of the study can be better understood and it also provides a theoretical conception, which can serve as a guide for further researches.

There is always an element of subjectivity and researches generally commit certain errors while interpreting the results of his study. Educational researchers have to exercise all care and caution in formulating his conclusions and arriving at generalization on the basis of his data. Like interpretation of results, the formulation of conclusions and generalizations also demand keen observation, broad outlook and power of logical thinking.
5.1. Findings

Section-I

1. The level of environmental factors and its dimensions of higher secondary biology students with reference to sex is average. Among the average value, boys higher secondary biology students have high score (74.4 percent). The level of boys higher secondary biology students in the dimension social environment is high (77.4 percent). The level of girls higher secondary biology students in school environment is low (66.3 percent).

2. The level of environmental factors and its dimensions of higher secondary biology students with reference to standard is average. Among the average value, XI standard higher secondary biology students have high score (72.3 percent). The level of XI standard higher secondary biology students in the dimension social environment is high (74.1 percent). The level of XII standard higher secondary biology students in school environment is low (66.7 percent).

3. The level of environmental factors and its dimensions of higher secondary biology students with reference to locality of the school is average. Among the average value, urban school higher secondary biology students have high score (72.8 percent). The level of rural school higher secondary biology students in the dimensions school environment and social environment is high (74.6 and 74.6 percent). The level of rural school higher secondary biology students in home environment is low (65.9 percent).

4. The level of environmental factors and its dimensions of higher secondary biology students with reference to nativity of the students is average. Among the average value, urban higher secondary biology students have high score (72.7 percent). The level of urban higher secondary biology students in the dimensions home environment is high (74.6 percent). The level of rural higher secondary biology students in home environment is low (66.2 percent).

5. The level of environmental factors and its dimensions of higher secondary biology students with reference to nature of the school is average. Among the average value, boys school higher secondary biology students have high score (75.6 percent). The level of boys school higher secondary biology students in the dimensions social environment is high (78.6 percent). The level of co-education school higher secondary biology students in school environment is low (66.0 percent).
6. The level of environmental factors and its dimensions of higher secondary biology students with reference to type of management is average. Among the average value, government higher secondary biology students have high score (77.9 percent). The level of government higher secondary biology students in the dimensions social environment is high (79.3 percent). The level of government higher secondary biology students in school environment is low (65.0 percent).

7. The level of environmental factors and its dimensions of higher secondary biology students with reference to medium of institution is average. Among the average value, Tamil medium higher secondary biology students have high score (75.9 percent). The level of Tamil medium higher secondary biology students in the dimensions home environment and social environment is high (73.7 and 73.7 percent). The level of English medium higher secondary biology students in school environment is low (67.0 percent).

8. The level of environmental factors and its dimensions of higher secondary biology students with reference to status of the family is average. Among the average value, Joint family higher secondary biology students have high score (72.1 percent). The level of joint family higher secondary biology students in the dimensions social environment is high (77.1 percent). The level of nuclear family higher secondary biology students in school environment is low (68.1 percent).

9. The level of study habits and its dimensions of higher secondary biology students with reference to sex is average. Among the average value, girls higher secondary biology students have high score (69.0 percent). The level of boys higher secondary biology students in the dimension planning of the subject is high (77.4 percent). The level of girls higher secondary biology students in planning of the subject is low (65.7 percent).

10. The level of study habits and its dimensions of higher secondary biology students with reference to standard is average. Among the average value, XI standard higher secondary biology students have high score (70.2 percent). The level of XI standard higher secondary biology students in the dimensions preparation for examination is high (75.6 percent). The level of XII standard higher secondary biology students in studies at home is low (64.5 percent).
11. The level of study habits and its dimensions of higher secondary biology students with reference to locality of the school is average. Among the average value, urban school higher secondary biology students have high score (68.1 percent). The level of rural school higher secondary biology students in the dimension planning of the subject is high (76.5 percent). The level of urban school higher secondary biology students in studies at home is low (62.4 percent).

12. The level of study habits and its dimensions of higher secondary biology students with reference to nativity of the student is average. Among the average value, rural higher secondary biology students have high score (66.9 percent). The level of urban higher secondary biology students in the dimension reading and note taking is high (78.3 percent). The level of urban school higher secondary biology students in studies at home is low (64.4 percent).

13. The level of study habits and its dimensions of higher secondary biology students with reference to nature of the school is average. Among the average value, girls school higher secondary biology students have high score (72.9 percent). The level of girls school higher secondary biology students in the dimension preparation for examination is high (78.4 percent). The level of boys school higher secondary biology students in studies at home is low (60.9 percent).

14. The level of study habits and its dimensions of higher secondary biology students with reference to type of management is average. Among the average value, private higher secondary biology students have high score (71.2 percent). The level of government higher secondary biology students in the dimension preparation for examination and studies at school is high (79.3 percent). The level of aided school higher secondary biology students in studies at school is low (60.0 percent).

15. The level of study habits and its dimensions of higher secondary biology students with reference to medium of institution is average. Among the average value, Tamil medium higher secondary biology students have high score (70.6 percent). The level of Tamil medium higher secondary biology students in the dimension reading and note taking is high (77.6 percent). The level of English medium higher secondary biology students in studies at home is low (65.2 percent).
16. The level of study habits and its dimensions of higher secondary biology students with reference to status of the family is average. Among the average value, nuclear family higher secondary biology students have high score (69.4 percent). The level of joint family higher secondary biology students in the dimension reading and note taking is high (78.5 percent). The level of nuclear family higher secondary biology students in studies at home is low (61.6 percent).

17. The level of self esteem and its dimensions of higher secondary biology students with reference to sex is average. Among the average value, girls higher secondary biology students have high score (70.2 percent). The level of girls higher secondary biology students in the dimension family is high (76.4 percent). The level of boys higher secondary biology students in competency is low (61.4 percent).

18. The level of self esteem and its dimensions of higher secondary biology students with reference to standard is average. Among the average value, XI standard higher secondary biology students have high score (72.7 percent). The level of XI standard higher secondary biology students in the dimension competency is high (78.7 percent). The level of XII standard higher secondary biology students in social esteem is low (63.7 percent).

19. The level of self esteem and its dimensions of higher secondary biology students with reference to locality of the school is average. Among the average value, urban higher secondary biology students have high score (70.1 percent). The level of rural school higher secondary biology students in the dimension body and physical appearance is high (74.3 percent). The level of rural school higher secondary biology students in family is low (67.6 percent).

20. The level of self esteem and its dimensions of higher secondary biology students with reference to nativity of the student is average. Among the average value, urban higher secondary biology students have high score (69.6 percent). The level of urban higher secondary biology students in the dimension social esteem is high (78.5 percent). The level of rural school higher secondary biology students in social esteem is low (66.9 percent).

21. The level of self esteem and its dimensions of higher secondary biology students with reference to nature of the school is average. Among the average value, co-education school higher secondary biology students have high score
(69.8 percent). The level of co-education higher secondary biology students in
the dimension global self esteem is high (77.6 percent). The level of boys
school higher secondary biology students in moral and self control is low (62.4
percent).

22. The level of self esteem and its dimensions of higher secondary biology
students with reference to type of management is average. Among the average
value, government higher secondary biology students have high score (75.0
percent). The level of government higher secondary biology students in the
dimension global self esteem is high (82.9 percent). The level of aided higher
secondary biology students in global self esteem is low (62.3 percent).

23. The level of self esteem and its dimensions of higher secondary biology
students with reference to medium of the school is average. Among the average
value, Tamil medium higher secondary biology students have high score (70.2
percent). The level of English medium higher secondary biology students in the
dimension moral and self control is high (74.4 percent). The level of English
medium higher secondary biology students in family is low (64.6 percent).

24. The level of self esteem and its dimensions of higher secondary biology
students with reference to Status of the family is average. Among the average
value, nuclear family higher secondary biology students have high score (70.7
percent). The level of nuclear family higher secondary biology students in the
dimension family is high (76.7 percent). The level of joint family higher
secondary biology students in family, body and physical appearance is low
(64.9 and 64.9 percent).

25. (a) The level of academic achievement of higher secondary biology students
with reference to sex is average. Among the average value girls higher
secondary biology students have high score (65.1 percent). The level of boys
higher secondary biology students is low (63.9 percent).

(b) The level of academic achievement of higher secondary biology students with
reference to standard is average. Among the average value XII standard higher
secondary biology students have high score (64.5 percent). The level of XI
standard higher secondary biology students is low (63.2 percent).

(c) The level of academic achievement of higher secondary biology students with
reference to locality of the school is average. Among the average value rural
school higher secondary biology students have high score (67.6 percent). The level of urban school higher secondary biology students is low (65.0 percent).

(d) The level of academic achievement of higher secondary biology students with reference to nativity of the student is average. Among the average value rural higher secondary biology students have high score (66.4 percent). The level of urban school higher secondary biology students is low (65.6 percent).

(e) The level of academic achievement of higher secondary biology students with reference to nature of the school is average. Among the average value boys, girls school higher secondary biology students have high score (69.0 and 69.0 percent). The level of coeducation school higher secondary biology students is low (64.0 percent).

(f) The level of academic achievement of higher secondary biology students with reference to type of management is average. Among the average value aided higher secondary biology students have high score (66.9 percent). The level of private school higher secondary biology students is low (65.4 percent).

(g) The level of academic achievement of higher secondary biology students with reference to medium of the school is average. Among the average value English medium higher secondary biology students have high score (68.7 percent). The level of Tamil medium higher secondary biology students is low (65.8 percent).

(h) The level of academic achievement of higher secondary biology students with reference to status of the family is average. Among the average joint family higher secondary biology students have high score (69.9 percent). The level of nuclear family higher secondary biology students is low (64.5 percent).

Section -II

1. There is no significant difference in environmental factors and its dimensions of higher secondary biology students with reference to sex.

2. There is no significant difference between XI standard and XII standard students in their social environment and total environment. But there is significant difference between XI standard and XII standard students in their home environment and school environment.

3. There is no significant difference in environmental factor and its dimensions of higher secondary biology students with reference to locality of the school.
4. There is no significant difference between rural students and urban students in their social environment and total environment. But there is significant difference between rural students and urban students in their home environment and school environment.

5. There is no significant difference between Tamil medium and English medium students in their home environment and school environment. But there is significant difference between Tamil medium and English medium students in their social environment and total environment.

6. There is significant difference between nuclear family student and joint family students in their home environment, school environment, social environment and total environment.

7. There is no significant difference between boys and girls students in their studies at home, reading and note taking, planning of the subject, preparation for examination, studies at school and total study habits. But there is significant difference between boys and girls students in their habit of concentration and general habits and attitudes.

8. There is no significant difference between XI standard and XII standard students in their planning of the subject, habit of concentration, preparation for examination, general habits and attitudes, studies at school and total study habits. But there is significant difference between XI standard and XII standard students in their studies at home and reading and note taking.

9. There is no significant difference between rural school and urban school in their planning of the subject, preparation for examination and studies at school. But there is significant difference between rural school and urban school in their studies at home, reading and note taking, habit of concentration, general habits and attitudes and total study habits.

10. There is no significant difference between rural students and urban students in their studies at home, reading and note taking, planning of the subject, habit of concentration, studies at school and total study habits. But there is significant difference between rural students and urban students in their preparation for examination and general habits and attitudes.

11. There is no significant difference between Tamil medium and English medium students in their planning of the subject, habit of concentration, general habits and attitudes and studies at school. But there is significant difference between
Tamil medium and English medium students in their studies at home, reading and note taking, preparation for examination and total study habits.

12. There is no significant difference between nuclear family and joint family students in their planning of the subject, habit of concentration, preparation for examination, general habits and attitudes, studies at school and total study habits. But there is significant difference between nuclear family and joint family students in their studies at home and reading and note taking.

13. There is no significant difference between boys and girls students in their competency. But there is significant difference between boys and girls students in their global self esteem, moral and self control, social esteem, family, body and physical appearance and total self esteem.

14. There is no significant difference between XI and XII standard students in their competency, moral and self control, social esteem and total self esteem. But there is significant difference between XI and XII standard students in their global self esteem, family and body and physical appearance.

15. There is no significant difference between rural school and urban school students in their competency, moral and self control and total self esteem. But there is significant difference between rural school and urban school students in their global self esteem, social esteem, family and body and physical appearance.

16. There is no significant difference between rural and urban school students in their family and total self esteem. But there is significant difference between rural and urban school students in their competency, global self esteem, moral and self control, social esteem and body and physical appearance.

17. There is no significant difference between Tamil and English medium students in their competency and total self esteem. But there is significant difference between English and Tamil medium students in their global self esteem, moral and self control, social esteem, family and body and physical appearance.

18. There is no significant difference between joint family and nuclear family students in their competency, moral and self control, social esteem, body and physical appearance and total self esteem. But there is significant difference between joint and nuclear family students in their global self esteem and family.

19. There is significant difference in the academic achievement of higher secondary students in biology with reference to 1. Sex 2. Standard 3. Locality of the
Section-III

1. There is no significant difference among boys, girls and coeducation school students in their environmental factors. But there is significant difference among boys, girls and coeducation school students in the dimensions of home environment and school environment.

2. There is no significant difference among boys, girls and coeducation school students in their study habits. But there is significant difference among boys, girls and coeducation school students in the studies at home, reading and note taking, planning of the subject, habit of concentration, preparation for examination, studies at school and total study habits.

3. There is no significant difference among boys, girls and coeducation school students in their self esteem. But there is significant difference among boys, girls and coeducation school students in their competency, global self esteem, social esteem, family, body and physical appearance and total self esteem.

4. There is significant difference among boys school, girls school and coeducation school biology students in their academic achievement.

5. There is no significant difference among government aided and self financing school students in their environmental factors. But there is significant difference among government, aided and self financing school students in their school environment, social environment and total environment.

6. There is no significant difference among government, aided and self financing school students in their study habits. But there is significant difference among government, aided and self financing school students in their studies at home, reading and note taking, habit of concentration, preparation for examination, general habit and attitudes and total study habits.

7. There is no significant difference among government, aided and self financing school students in their self esteem. But there is significant difference among government, aided and self financing school students in their competency, global self esteem, family, body and physical appearance and total self esteem.

8. There is significant difference among government, aided and self financing school students in their academic achievement.
Section-IV

1. There is no significant association between fathers’ education and their children’s home environment, school environment, social environment and total environment.

2. There is no significant association between fathers’ education and their children’s studies at home, reading and note taking, planning of the subject, habit of concentration, preparation for examination, general habit and attitudes and studies at school. But there is significant association between fathers’ education and their children’s total study habits.

3. There is no significant association between father’s education and their children’s competency, moral and self control, family, body and physical appearance and total self esteem. But there is significant association between fathers’ education and their children’s global self esteem and social esteem.

4. There is no significant association between fathers’ education and their children’s academic achievement

5. There is no significant association between fathers’ occupation and their children’s home environment, school environment, social environment and total environment.

6. There is no significant association between fathers’ occupation and their children’s studies at home, habit of concentration, studies at school and total study habits. But there is significant association between fathers’ occupation and their children’s reading and note taking, planning of the subject, preparation for examination and general habit and attitudes.

7. There is no significant association between fathers’ occupations and their children’s competency, global self esteem, body and physical appearance and total self esteem. But there is significant association between fathers’ occupation and their children’s moral and self control, social esteem and family.

8. There is no significant association between fathers’ occupation and their children’s academic achievement

9. There is no significant association between fathers’ income and their children’s home environment, social environment and total environment. But there is significant association between fathers’ income and their children’s school environment.
10. There is no significant association between fathers’ income and their children’s studies at home, reading and note taking, habit of concentration, preparation for examination, general habit and attitudes, studies at school and total study habits. But there is significant association between fathers’ income and their children’s planning of the subject.

11. There is no significant association between fathers’ income and their children’s moral and self control, body and physical appearance and total self esteem. But there is significant association between fathers’ income and their children’s competency, global self esteem, social esteem and family.

12. There is no significant association between fathers’ income and their children’s academic achievement.

13. There is no significant association between mothers’ education and their children’s home environment and total environment. But there is significant association between mothers’ education and their children’s school environment and social environment.

14. There is no significant association between mothers’ education and their children’s studies at home, reading and note taking, planning of the subject, habit of concentration, general habit and attitudes, studies at school and total study habits. But there is significant association between mothers’ education and their children’s preparation for examination.

15. There is no significant association between mothers’ education and their children’s competency and total self esteem. But there is significant association between mothers’ education and their children’s global self esteem, moral and self control, social esteem, family and body and physical appearance.

16. There is no significant association between mothers’ education and their children’s academic achievement.

17. There is no significant association between mothers’ occupation and their children’s school environment, social environment and total environment. But there is significant association between mothers’ occupation and their children’s home environment.

18. There is no significant association between mothers’ occupations and their children’s reading and note taking, planning of the subject, habit of concentration, general habit and attitudes, studies at school and total study habits.
habits. But there is significant association between mothers’ occupations and their children’s studies at home and preparation for examination.

19. There is no significant association between mothers’ occupation and their children’s competency, moral and self control, body and physical appearance and total self esteem. But there is significant association between mothers’ occupation and their children’s global self esteem, social esteem and family.

20. There is no significant association between mothers’ occupation and their children’s academic achievement.

21. There is no significant association between mothers’ income and their children’s home environment, school environment, social environment and total environment.

22. There is no significant association between mothers’ income and their studies at home, reading and note taking, planning of the subject, habit of concentration, general habit and attitudes and total study habits. But there is significant association between mothers’ income and their children’s preparation for examination and studies at school.

23. There is no significant association between mothers’ income and their children’s competency, global and self esteem, body and physical appearance and total self esteem. But there is significant association between mothers’ income and their children’s moral and self control, social esteem and family.

24. There is no significant association between mothers’ income and their children’s academic achievement

Section-V

1. There is significant relationship between environmental factors and academic achievement with reference to background variables except girls school, government and aided school.

2. There is significant relationship between home environment and achievement with reference to background variables except rural students, girls school, coeducation school, government school and aided school students.

3. There is significant relationship between school environment and academic achievement with reference to background variables except XI standard students, girls’ schools and aided school.
4. There is significant relationship between social environment and academic achievement with reference to background variables except rural, urban, girls, Government and aided school

5. There is significant relationship between study habits and academic achievement with reference to background variables.

6. There is significant relationship between self esteem and academic achievement with reference to background variables.

5.2 Interpretations

5.2. a. Discussion on the Percentage Analysis Results

Based on percentage analysis, the value of social environmental factors boys is higher than girls. This may be due to the fact that the boys are more outgoing than girls. Boys interact with the society more than girls. The percentage score of XI standard students is higher than XII standard students. This may be due to the fact that XII standard students are much more exam oriented hence they have little time to interact with the social environment. The same is true for urban students who have better percentage score than the rural students.

The percentage score for environment with regard to nativity is higher for urban students than for rural students the modern urban life may be creating good family environment. The same score is higher for boys’ school than for girls’ schools. The percentage score for social environment is higher for government school. This may be due to the fact that, the majority of the poor students is studying in the government school. The percentage score for home environment and social environment are higher for Tamil medium students. It appears that the medium of instruction has an influence over this factor. The percentage score for social environment of students from joint family is higher than that of students from nuclear family, this means that joint family promotes social environment.

The percentage scores for study habits among girls are higher than boys. This may be due to fact that girls are far more systematic. The percentage score of XI standard students is higher than XII standard students. This may be due to the fact that XI students are involved not only in the exams but other school related activities also. In the same way the urban school students’ score is higher than that of rural students in study habit. This may be due to the fact that the urban school students are given more coaching and practice. The percentage score of urban students with regard to study habits is higher than that of rural students. Urban students get more guidance with
regard to the study habit. The study habits score for girls is higher than that of boys as girls are far more committed than boys in the studies. The percentage score for study habits is higher for aided school. This may be due to special classes conducted by aided schools, special efforts by management and also efficient teachers. The same score for Tamil medium student is higher than for English medium students. This shows the medium of instruction has a role to play with regard to study habits.

The percentage score for self esteem of girls is higher. It appears that girls view themselves better than their male counterparts. The same score for XI standard students is higher than XII standard students. The academic pressure on XII standard students has a bearing on the self esteem. The percentage score for self esteem is higher among urban school students. Urban school students have more exposure and experience which contribute the self esteem. The same is true with regard to nativity as urban school students have better percentage score in self esteem.

Students of co-education institution have better percentage score of self esteem. The interaction and competition between boys and girls may have promoted self esteem. The government school students have higher self esteem than aided and private school students. This may be due to the fact that more freedom is given with respect to the dimensions of the self esteem. The percentage of self esteem score of English medium students on selected dimensions are higher as students of English medium might have view themselves better than Tamil medium students. The percentage score of self esteem among students from nuclear families is higher than that of students from joint family. More independence and freedom appear to promote self esteem.

Female students have high level of achievement in biology than the male students. Male students may have a lot of out world distractions like outing, chatting, and mass media like TV, movies and internet. Normally, female students remain at home most of the time after the school is over and they put serious efforts in their studies. This may in turn result in their higher achievement in biology. The achievement score is high for XII standard students. This may be due to the fact that the pressure against future life is more. Rural schools are much better than urban schools. This may be due to the development of the modernization. The same is true for rural students who have better percentage score than the urban students. The achievement score is high for girls’ school student. It is because of the special coaching given to girls. English medium students have better achievement than Tamil medium students. This may be due to the fact that good discipline and good environment in the English
medium schools. The same is true for joint family students who have better percentage score than the nuclear family students.

5.2. b. Discussion on the “t” test Analysis Results

There is significant difference between XI standard and XII standard students in their home environment, school environment. In this XI standard students home environment is high. This may be due to the fact that there is no need of getting high marks in the public examination; syllabus is not heavy for XI standard and also less periodical test than XII standard students. Parent may expect high marks in XII standard not in XI standard. XI standard examination does not decide the higher studies of the students. So disturbance in home environment, like T.V, music, guest and other family functions do not disturb their studies. Regarding XII standard, school environment is high. This may be due to the fact that XII standard students in anticipation of school results there is an important of school facilities like classroom laboratories, library etc. The qualified school teachers take personal care for the students.

There is significant difference between rural and urban students in their home environment, school environment. Urban students’ home environment is found better. This may be due to the fact that educated parents, facilities like internet, reference books, news papers in home, sound economic condition, exposure of current development in education and job opportunity. Rural students’ school environment is found high. This may be due to the fact that the school location is calm with large laboratories and playground in a natural atmosphere.

There is significant difference between Tamil medium and English medium in their social environment and total environment. English medium students are better than Tamil medium students. This may be due to the fact that command over the English language enhances their leadership qualities to improve their communication and interaction towards society. There is a significant difference between nuclear family and joint family students in their home environment, school environment, social environment and total environment. This may be due to the fact that minimum members in the family, parents care, less problems, facilities, confident and more communicative.

There is significant difference between boys and girls students in their habit of concentration, general habit and attitude. In habit of concentration, girls are better than boys. This may be due to the fact that girls are naturally studious and they have less
deviation in the society. In the dimensions, general habit and attitude, boys are better than girls. This may be due to the fact that self interest, motivation and interact freely with the society.

There is significant difference between XI standard and XII standard students in their studies at home and reading and note taking. This may be due to the fact that XII standard students are aspiring for high marks in the public examination and ensuring higher studies and the bright career. There is significant difference between rural school and urban school in their studies at home, reading and note taking, habit of concentration, general habit and attitude and total study habits. Rural school is better than urban school in the dimension of studies at home, reading and note taking general habit and attitude. This may be due to the fact that spacious school calm atmosphere, less noise pollution and tendency of the rural population. In habit of concentration, urban schools are better than rural schools. This may be due to the awareness of study habits.

There is significant difference between rural students and urban student in their preparation for examination, general habit and attitudes. This may be due to the fact that awareness of study habit and studying in competition school. There is significant difference between Tamil medium and English medium students in their studies at home, reading and note taking, preparation for examination and total study habit. This may be due to the fact that the master over the English language, confidence and awareness of study habits, self motivation curiosity and interest because of the non availability of proper guidance and counseling to them from their close surroundings. There is significant difference between nuclear family and joint family students in their studies at home and reading and note taking. This may be due to the fact that individual care taken by parents and sound economic background.

There is significant difference between boys and girls in their global self esteem, moral and self control, social esteem, family, body and physical appearance and total self esteem. Girls are better than boys in the self esteem. This may be due to the fact that the girls are very much exposed to the culture, and family background. There is significant difference between XI standard and XII standard students in their global self esteem, family, body and physical appearance. XII standard students are better than XI standard students. This may be due to the fact that recognition from the family relatives and peer groups, environment of encouragement and appreciation, transition period in terms of physical factors with respect to the dimension. There is
significant difference between rural school and urban schools students in their global self esteem, social esteem, family, body and physical appearance. The urban school students are better than rural school students. This may be due to the development of urbanization and enough facilities.

There is significant difference between rural and urban students in their competency, global self esteem, moral and self control, social esteem, body and physical appearance. Rural students are better than urban students in the dimensions competency and global self esteem. This may be due to various bad practices and habits which are not prevalent among rural students as compared to those of modern urban society, which might have promoted them to have better self esteem.

The urban students are better than rural students in the dimensions moral and self control, social esteem, body and physical appearance. This may be due to the fact that the facilities and opportunities provided in urban school promoted their self esteem. There is significant difference between English medium and Tamil Medium students in their global self esteem, moral and self control, social esteem, family, body and physical appearance. This may be due to the fact that English language plays a vital role and it’s easy to help in the higher studies, good discipline and good environment and wealthy family background. There is significant difference between nuclear and joint family students in their global self esteem, family. This may be due to the small size of the family and low expenses.

5.2. c. Discussion on the “F” test Analysis Results

There is significant difference among boys, girls and coeducation school in their home environment and school environment. Girls school are better than boys school and coeducation school. This may be due to the fact that female students are involved in limited activity, their interactions with friends and immediate environment around them are less than in the case of the males.

There is significant difference among boys, girls and coeducation schools in their studies at home, reading and note taking, planning of the subject, habit of concentration, preparation for examination, studies at school and total study habits. Girls school are better than boys and coeducation school. This may be due to the fact that female students have obtained higher scores than male students; female students may spend more time in home, tuition-classes and act as per the tips given by parents and elders as a support for their study.
There is significant difference among boys, girls and coeducation school students in their competency, global self esteem, social esteem, family, body and physical appearance and total self esteem. Boys school competency is better than girls and co-education school. This may be due to the fact that male students are actively involved in co-curricular activities. Male students have wider knowledge about the external worlds with the help of chatting, roaming, magazine, films, newspapers etc. Girls schools are better than boys school and coeducation school in the dimension of global self esteem, social esteem, family, body and physical appearance and total self esteem. This may be due to the fact that competitive and ego centered attitudes exhibited by these schools. This may also be due to their longing to come forward in the society.

There is significant difference among boys, girls and coeducation schools students in their achievement. Girls school are better than boys and coeducation schools. This may be due to the fact that girls are more responsible, devoted to their work and systematic than boys. Girls give importance to rote memory for learning, the understanding and grasping capacity also very high compared with boys. Girls have daily learned their subjects and the boys only concentrate during the exam days in depth manner recognize the main theme of the subject.

There is significant difference among government, aided and self financing school in their school environment, social environment, and total environment. Aided schools are better than government and self financing schools. This may be due to the fact that aided schools are getting more financial assistance from well wishers and utilize them better than government and self financing school.

There is significant difference among government, aided and self financing school students in their studies at home, reading and note taking, habit of concentration, preparation for examination, general habits and attitudes and total study habits. Self financing school students are better than government and aided school students. This may be due to the fact that strict and well discipline, quality teaching and coaching imparted by majority of the self financing schools.

There is significant difference among government aided and self financing school students in their competency, global self esteem, family, body and physical appearance and total self esteem. Aided school students are better than government, self financing school students. This may be due to the fact that more concentration is given respect to the above dimension.
There is significant difference among government, aided and self financing school students in their academic achievement. Self financing school students are better than government and self financing school. This may be due to the special classes conducted by self financing schools special efforts taken by management and also by efficient teachers. Due to the competition among the local schools best results are achieved.

5.2. d. Discussion on the Chi-Square Analysis Results

There is significant association between mother’s education and their children’s school environment and social environment. This may be due the fact that the mother’s impart knowledge and the educational background very helpful to their children. The same is true with regard to mother’s occupation and their children’s home environment.

The chi-square analysis result shows that there is significant association between educational qualification of parents and their study habits of their children. The study habits involved the student and their educational qualification. The school level, college level and professional level parents are highly motivated to studying their children in the same. Because the world is highly competitive now a days. The students recognize the situation of rapid change in scientific worlds. The recent technologies are changing their attitude towards their learning in biology. This shows that the educated parents are very helpful to their children in getting high score in their academic performance.

There is significant association between fathers’ and mothers’ education and their children’s self esteem. It shows that the fathers’ education and mothers’ education influence the study skills. This may be due to the fact that the parents impart knowledge and so the educational background helps to shine in the self esteem of higher secondary biology students.

The parents’ occupation is an important factor of their children’s study habits in biology. The parents know the present day situation and so they give the advice to their young ones. It is very useful to them. There is significant association between parent’s occupation and their children’s self esteem of higher secondary biology students. Government employees’ children’s are having high self esteem than the children’s of private job, self-employed, daily wages, and house wife. The government employees make their living condition better, and can give special care to their children’s for the health and other things.
The parents’ monthly income is depending upon their children’s studies in biology. The parents are helping their kids favorably. The laboratory equipments like dissection box and other things are bought by the students with the help of their parents in adequate manner. So their achievement is very high.

5.2. e. Discussion on the Correlation Analysis Results

It is found out that there is no significant relationship between total environmental factors and academic achievement in girls school, government and aided school. Generally there is significant relationship between total environmental factors and academic achievement. It is because of the proper guidance and motivation provided at surrounding places.

There is no significant relationship between home environment and academic achievement in rural student, girls’ school, coeducation school, government and aided school. Generally there is significant relationship between home environment and academic achievement. This may be due to availability of pleasant atmosphere at home.

There is no significant relationship between school environment and academic achievement in XI standard, girls’ school and aided school. Generally there is significant relationship between school environment and academic achievement. This may be due to the reason that the present investigation school environments do not influence the academic achievement of the higher secondary students, because the higher secondary students do not pledge their concentration on such things and they shoulder the responsibility of scoring good marks in the examination. For this, they work hard and develop the positive perception on school environment.

There is no significant relationship between social environment and academic achievement in rural, urban, girls, government and aided school. Generally there is significant relationship between social environment and academic achievement. This may be due to public education and awareness programmes to promote positive perception. But there is significant relationship between study habits, self esteem and academic achievement with reference to background variables. It shows that these variables do not have impact over the establishment of relationship between those traits.
5.3 Recommendations and Educational Implications of the Study

Based on the findings of the present study, the following recommendations are made to maximize achievement in biology.

Influence of environmental factors on academic achievement is home environments, school environment, laboratory situation, faculty relationship, peer group environment and social environment. The study is made in terms of the variables such as gender, standard, locality of the school, nativity of the student, nature of the school, type of management, medium of the institution, status of the family, parents educational qualification, parents occupation and parents monthly income. Biology is an important subject which has a great future for students. So the government can take the necessary steps to overcome the problem of studying biology and achievement at the higher secondary level.

❖ Parents should provide congenial atmosphere for the student to study well at home.

❖ Seminars should be arranged for higher secondary students focusing attention on varied dimensions of school environment. During the seminars question hours should be allotted for the students in order to clarify their doubts regarding the school environment and its impact.

❖ Provision of better school environment is in the hands of the government, private bodies as well as the public. Hence a joint venture can be undertaken for improving the school environment.

❖ Good school environment would be a significant factor. It is not provided to the students of higher secondary schools. Hence, the management of every educational institution should provide a conducive school as well as classroom environment, which may fulfill the basic needs of a healthy organizational climate.

❖ Achievement motivation can be enhanced in the students through rewards, praises, setting models by teachers and creating pleasant school environment.

❖ Teacher should encourage feelings of cohesiveness among students through effective communication. This beneficial cohesive feeling can be induced by arranging tours and trips and by taking them to the places where people are in
need of external help. Students can be taken to various sports where natural calamities cause danger to common public and can be made to help those sufferers. This sort of experience will give sense of sensitivity and their knowledge to recognize their social environment.

- The biology teacher should give the assignment and to draw the internal structure of animal parts and floral diagrams regularly and check their work also. This will help their way of presentation, expression and also enhance their achievements.

- The syllabus system is the main barrier for teaching and learning biology, because the CBSE system is totally different from State Board syllabus. So the State Board syllabus must be updated.

- The government should provide fund for schools in an adequate manner to buy the aids. And the regular staff should be appointed for teaching biology in all schools.

- Teacher’s behaviour must be conducive and clear cut friendly manner for the students.

- Guidance and counseling may be given to the students about various good study habits and their importance in their academic career in the higher secondary level.

- The students may be made available with various literatures on study habits.

- The mode of examinations to test the aural, oral and communicative skills of students, just being introduced by the directorate of government examinations with due credit at the final and concluding examination at the higher secondary stage thereby enabling them to develop good study habits.

- A “How to study” summer course of 30-45 days may be imparted to the interested students and those who have undergone this course may be given due preference in joining the desired group at the high secondary stage itself.

- Group discussions may be arranged by the teachers then and there to enable them active high.

- The low achievers may be induced to participate in co-curricular activities of their interest in the view of helping them develop good study habits.
The various elements which are acting as hurdles or barriers in developing good study habits may be identified and not be allowed to exert their impact in this regard.

The students themselves may be made to realize the importance of good study habits in their academic career.

The students should plan a proper time schedule. The time schedule may be followed strictly which in due course, becomes routine in the minds of the students. While preparing a time schedule by the students, priority may be given according to the need of the programme.

Spaced studying can be encouraged instead of un-spaced studying. This may improve one’s memory-power and help in avoiding studying. This may improve one’s memory-power and help in avoiding day dreaming due to continuous studying.

Alternative types of work while studying should not be given by their family members.

The financial situation of the students has a negative impact on the students’ academic achievements. Poor performance may be due to the fact that their needs are not satisfied. These types of children could be financial aided by way of scholarship, loans and concessions, which could serve as motivating factor to do better in their studies.

For the improvement of global self-esteem students should be helped to set realistic goals for themselves and write down steps to work towards those goals. Students must not allow past experiences to determine their lives. They should be trained to take time regularly to be alone and enjoy their own company. Hobbies, individual sports, crafts and reading are examples of ways to be alone. They must be trained to become creative and have their own ideas. They should be asked about their other activities.

To improve the moral and self-control level of students, they must be taught to identify their strengths and weaknesses. It is better to remember that no one is perfect and they don't have to be perfect either. They must be helped not to over-react when they make a mistake. They should be made to accept that they are only human being and learn from the mistakes. They must be taught to trust their own feelings and intuitions but at the same time they must be taught to have control over their behaviour.
When they show breach of moral ethics, they should be allowed to suffer the consequences of their behaviour.

It seems that changes in the culture lead to changes in self-esteem. The social-esteem of students can be improved by helping them to make friends easily and also to show enthusiasm for new activities. They should be trained to be co-operative. Relationships with friends help to form their self-esteem, as do experiences with work and career. Therefore they should always look for friends with high self-esteem for their positive attitude would influence others to be more positive. The students must be advised to avoid people who make them unhappy. Also a student must avoid being judgmental. If a lot of students' interactions with others are criticisms, put-downs, complaints, or judgments, it may be keeping others away. For some people, a judgmental attitude comes from low self-esteem which they try to overcome by criticizing others. Hence the student should be trained to work on viewing others more positively.

Self-esteem develops and changes over the course of one's life. Therefore as regards family esteem, experiences and relationships with family members from birth until the present are strong influences. Hence they must be patient with the weaknesses and faults of others. They must be taught not to put any one down. Each student must be counseled about the responsibility they hold in the family.

To improve the esteem level concerning the phenomenon of body and physical appearance the students must be trained to be optimistic. In her book, Negaholics, psychologist Cherie Carter Scott offers this advice "Think Positive". The students must take time to realize the positive aspects in them. Self-esteem is based on the thoughts and feelings the students have about themselves. These can be positive or negative. High self-esteem is reflected by positive thoughts such as "I'm smart, attractive and interesting". These thoughts can help them feel effective, capable and lovable. Low self-esteem is reflected by negative thoughts such as "I'm ugly, stupid and boring". These thoughts can make them feel worthless, unlovable and incompetent. People with high self-esteem accept and like themselves.

"Think of what you have rather than what you lack. Of the things you have, select the best and then reflect how eagerly you would have sought them if you did not have them".

- Marcus Aurelius, 31 BC
5. 4. Suggestions for Further Research

Here in this present study the investigator has executed the studies with the environmental factors, study habit and self esteem influencing academic achievement of higher secondary biology students. Even then, in order to make the educational process still better, the investigator requests the future investigations to precede their research process in the following directions.

1. This study covers only Kanyakumari, Thoothukudi and Tirunelveli district in Tamil Nadu state. A similar study may also be conducted in other districts of Tamil Nadu.

2. A comparative study on the academic achievement of school and college students could be undertaken.

3. Academic achievement in relation to psychological aspect of the subjects could be studied.

4. A comparative study of academic achievement of technical and non-technical subjects could be undertaken.

5. Similar study may be undertaken in other subjects such as Mathematics, Physics, Chemistry, Social science and languages.

6. Longitudinal study of academic achievement may be undertaken from high school to higher secondary schools level.

7. A study of academic achievement in relation to intelligence and other social variables may be taken up.

8. A comparative study on the academic achievement of professional and other college students may be done.

9. The investigator had made the study of only the students of XI and XII standard, the study can be extended to different classes of all types of schools, including ICSE CBSE and Anglo Indian schools at different levels such as higher secondary, arts and science and professional college.

10. A similar study can be undertaken with different categories of students physically and mentally challenged and the impact of the problems they face in life and their effect on their academic achievement.
5.5. Conclusion

Now a day, one has to live in the scientific world. The biological research leads to the nano technology and found the human genome also. So our government should provide the facilities to the schools and encourage the students for risk taking, allows for co-operation, acceptance of the individual, and improve their reasoning ability. Above all, the suggestions for nurturing relationships or sharing authority with students should not be misinterpreted as mandates for teachers to change their personalities. Instead, teachers will shape the learning environment to their students in order to promote the intellectual growth and well-being of all members. The teachers may find the resources helpful in creating and sustaining a learning community.

Higher secondary education plays a very significant role in every individual life since after this education all decisions are made for the future. Students need proper guidance for the management of their time and efforts for better prospects. The study habits individually cultivated by them are likely to determine the level of their success. High self-esteem quickens the work, while low self-esteem slowed down the work leads to low motivation, and inhibits the capacity of human beings to care for themselves, Hence a growing number of people in society no longer have sufficient energy power or means of self reliance (mentally or physically) and have to rely on state provision. So, there is lack of self respect and a lack of respect for others. It leads to discrimination and poverty.

In addition to routine class room academic activities, all faculty students should be encouraged to explore themselves in order to gain self esteem. The teachers, parents and the society should encourage students to entrance their self esteem.

Abdul Kalam A.P.J had expressed that the youth had to develop aspiration and aspiration leads to achievement. This research, in this regard will help the students to lead a better achievement.