Chapter VI

SUMMARY AND CONCLUSIONS

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The outcome of the research work is presented in this chapter; which provides a clear, logical and definite end to the whole work done during the research process. This chapter also makes recommendation for future study. A conclusion is a well designed and well presented chapter which is intended to combine and summarize each of the previous chapters.

This chapter gives the investigator an opportunity to present the information in a free-form manner than in the case of other chapters of the dissertation.

6.1. STUDY IN RETROSPECT

The present study intended to find out the effect of select correlates of achievement motivation on achievement in biology among the higher secondary students. This can be established through the identified correlates of achievement motivation such as examination anxiety, study habits, self concept and home learning environment of the students upon their achievement in biology. In this section an overview of the significant aspect of the stages in conducting the present study and the important findings and suggestions for further study are presented.

6.1.1. Variables of the study

In the study examination anxiety, study habits, self concept and home learning environment are taken as independent variables and the achievement in biology is treated as the dependent variable.

6.1.2. Hypotheses of the study

1. There exists a significant relationship between the correlates of achievement motivation and achievement in biology among the students at higher secondary level for the whole sample and relevant sub samples.
2. The effect of select correlates of achievement motivation on achievement in biology is not significant among the students at the higher secondary schools.

6.1.3. Objectives of the Study

1. To find out the levels of select correlates of achievement motivation and achievement in biology of the students from higher secondary schools for the sample and the relevant sub samples.

2. To find out the relationship of the select correlates of achievement motivation and achievement in biology among the students at the higher secondary schools for the whole sample and the relevant sub samples.

3. To find out the effect of the select correlates of achievement motivation on achievement in biology among the students at the higher secondary schools.

6.1.4. Methodology in Brief

Normative survey method was used for the study. Considering the different aspects of the study stratified random sampling techniques was used. Students of the higher secondary schools were taken as the population. The sample is made up of 740 higher secondary biology students from the six districts of Kerala. Due representation was given to gender, locale of the institutions and the type of management.

The tools used for the study were the examination anxiety scale, study habits inventory, self concept scale, home learning environment inventory and the achievement test in biology. All the five tools were prepared and standardized by the investigator with the help of the supervising teacher.

The data collected is consolidated and tabulated using appropriate statistical techniques.
6.2 MAJOR FINDINGS OF THE STUDY

The major findings arrived at from this study are the following.

1. FINDINGS BASED ON THE FIRST OBJECTIVE

A. The levels of Achievement in Biology

For the whole sample

Achievement in Biology among the whole sample (N=740) of Higher secondary students shows that 165 (22.29 percent) are high achievers, 421 (56.89 percent) are average achievers and 154 students (20.81 percent) are low achievers. Mean of the whole sample is 21.89 and standard deviation is 5.782.

It indicates that majority of the higher secondary students are average in their level of achievement in biology

Comparison of levels of Achievements in Biology among Sub samples

a) The Mean scores of the achievement in biology for boys and girls differ significantly at both .01 and .05 levels.

The mean scores of the achievement in biology for boys (20.01) and girls (23.05) and standard deviation were of 6.306 and 5.108 respectively. The critical ratio of the mean scores of achievement in biology of boys and girls (CR= 7.176, p<.01) shows that girls have better achievement in biology than boys.

b) The mean scores of the achievement in biology of urban and rural students differ significantly at both .01 and .05 levels.

The mean scores of the achievement in biology for urban (22.89) and rural students (21.29) and standard deviation are of 5.836 and 5.673 respectively. The critical ratio of the mean scores of achievement in biology for urban and rural
students (CR= 3.670, p<.01) shows that urban students have better achievement in biology than rural students.

c) The mean scores of the achievement in biology for government, aided and unaided school students differ significantly at both .01 and .05 levels.

The mean achievement scores in biology for government (21.78), aided (23.24) and unaided (19.81) school students. It was found that there is significant difference in achievement in biology among government, aided and unaided schools (F=19.218, p <.01). When we analyzing the values more objectively through Scheffe’s post hoc analysis it was found that government -aided schools has no significant difference in their achievement in biology. In the case of government -unaided, aided -unaided the mean score of achievement in biology differ significantly. The obtained value of Scheffe’s post hoc analysis was 1.456, 1.975and 3.431 respectively.

B. The levels of Examination Anxiety

For the whole Sample

Examination anxiety among the whole sample (N=740) of Higher secondary students shows that 101 (13.64 percent) are high, 529 (71.48 percent) are average and 110 students (14.86 percent ) are in low levels. Mean of the whole sample is 104.32 and standard deviation is 14.883

It indicates that majority of the higher secondary students are average in their level of examination anxiety.
Comparison of levels of Examination Anxiety among Sub samples

a) The Mean scores of the examination anxiety for boys and girls differ significantly at both .01 and .05 levels.

The Mean scores of the examination anxiety for boys (98.87) and girls (107.68) and standard deviation were of 15.298 and 13.589 respectively. The Critical ratio of the mean scores of examination anxiety of boys and girls (CR= 8.155, p<.01); which shows that girls have high examination anxiety than boys.

b) The Mean scores of the examination anxiety for urban and rural differ significantly at both .01 and .05 levels.

The Mean scores of the examination anxiety for urban (102.38) and rural students (105.48) and standard deviation were of 14.666 and 14.906 respectively. The critical ratio of the mean scores of examination anxiety of urban and rural students (CR= 2.753, p<.01); which shows that rural students have high examination anxiety than urban students.

c) The mean scores of the examination anxiety for government, aided and unaided school students do not differ significantly.

The mean scores of the examination anxiety for government, aided and unaided school students were 105.57, 103.81, and 102.93 respectively.

It indicates that there is no significant difference in the status of examination anxiety with respect to type of management (F=1.928, p>.05).
C. The levels of Study Habits

For the whole Sample

Study habits among the whole sample (N=740) of Higher secondary students shows that 132 (17.8 percent) are high, 487 (65.8 percent) are average and 121 students (16.35 percent) are in low levels. Mean of the whole sample is 24.14 and standard deviation is 4.84

It indicates that majority of the higher secondary students are average in their level of study habits.

Comparison of levels of study habits among sub samples

a) The mean scores of the study habits of boys and girls differ significantly at both .01 and .05 levels.

The mean scores of the study habits for boys (22.87) and girls (24.93) and standard deviation were of 5.167 and 4.463 respectively. The Critical ratio of the mean scores of study habits for boys and girls (CR= 5.757, p<.01) shows that girls have good study habits than boys.

b) The mean scores of the study habits for urban and rural differ significantly at both .01 and .05 levels.

The mean scores of the study habits for urban (24.74) and rural students (23.79) and standard deviation were of 5.2 and 4.59 respectively. The critical ratio of the mean scores of study habits of urban and rural students (CR= 2.58, p<.01) shows that urban students have good study habits than rural students.

c) The mean scores of the study habits for government, aided and unaided school students differ significantly at both .01 and .05 levels.
The mean scores of the study habits for government, aided and unaided school students were 24.22, 24.97 and 22.63 respectively. It indicates that there is significant difference between government, aided and unaided (F=12.476, p <.01) school students with respect to the level of study habits. Then analyzing the values more objectively through Scheffe’s post hoc analysis it was found that government - aided schools has no significant difference in their study habits. In case of government - unaided schools, aided - unaided schools the mean of study habits differ significantly. The obtained value of Scheffe’s post hoc analysis was 0.752, 1.585 and 2.337 respectively.

This shows that study habits of government and unaided, aided and unaided students show marked difference in their level of study habits.

D. The levels of Self Concept

For the whole sample

Self Concept among the whole sample (N=740) of Higher secondary students shows that 118 (15.94 percent) are high, 498 (67.29 percent) are average and 124 students (16.75 percent) are in low levels. Mean of the whole sample is 74.15 and standard deviation is 8.747

It indicates that majority of the higher secondary students are average in their level of self concept.

Comparison of level of Self Concept among sub samples

a) The mean scores of the self concept of boys and girls differ significantly at both .01 and .05 levels.
The mean scores of the self concept for boys (72.90) and girls (74.91) and standard deviation were of 8.810 and 8.629 respectively. The Critical ratio of the Mean scores of Self Concept of Boys and Girls (CR= 3.056, p<.01) which shows that girls have strong self concept than boys.

b) The mean scores of the self concept for urban and rural differ significantly at .05 level.

The mean scores of the self concept for urban (75.03) and rural students (73.62) and standard deviation were of 8.33 and 8.955 respectively. The critical ratio of the mean scores of self concept of urban and rural students (CR= 2.120, p<.05) which shows that urban students have strong self-concept than rural students.

c) The mean scores of the self concept for government, aided and unaided school students do not differ significantly at both levels of .01 and .05 .

The mean scores of the self concept for government aided and unaided school students were 73.99, 74.71 and 73.47 respectively. It indicates that there is no significant difference in the level of self concept between government, aided and unaided school students (F=1.119, p >.05)

E. The levels of Home Learning Environment

For the whole sample

Home learning environment among the whole sample (N=740) of Higher secondary students shows that 157 (21.21 percent) are high, 489 (66.08 percent) are average and 94 students (12.7 percent) are in low levels. Mean of the whole sample is 26.11 and standard deviation is 4.930
It indicates that majority of the higher secondary students are average in their level of home learning environment

**Comparison of levels of Home Learning Environment among sub samples**

a) The mean scores of the home learning environment for boys and girls differ significantly at both .01 and .05 levels.

The mean scores of the home learning environment for boys (24.58) and girls (27.06) and standard deviation were of 5.047 and 4.616 respectively. The critical ratio of the mean scores of home learning environment of boys and girls (CR= 6.834, p<.01) which indicates that girls utilize home learning environment more fruitfully than boys.

b) The mean scores of the home learning environment for urban and rural students differ significantly at both .01 and .05 levels.

The mean scores of the home learning environment for urban (27.05) and rural students (25.55) and standard deviation were of 5.106 and 4.739 respectively. The critical ratio of the mean scores of home learning environment for urban and rural students (CR= 4.056, p<.01) which indicates that urban students utilizes home learning environment more fruitfully than rural students.

c) The mean scores of the home learning environment for government, aided and unaided school students differ significantly at .05 levels.

The mean scores of the home learning environment for government (26.61) and aided (26.44) and unaided (24.67) school students. It was found that there is significant difference in home learning environment among the students studying in government, aided and unaided schools (F=9.443, p <.01). When we analyzing the f values more objectively, through Scheffe’s post hoc analysis it was found that
the students studying in government-aided schools, government-unaided schools and aided-unaided schools show no significant difference in their home learning environments. The obtained value of Scheffe’s post hoc analysis was 0.174, 1.946 and 1.772 respectively.

2. FINDINGS BASED ON THE SECOND OBJECTIVE

A. Correlation of examination anxiety and achievement in biology

The correlation of examination anxiety and achievement in biology is measured through Pearson’s product moment coefficient of correlation. The relationship is negligible and positive for the whole sample and sub sample based on gender, locale of the institution and the type of management. These relationships are summarized as follows.

- For the whole sample ($r=0.109$, $t$-value=2.9788) : significant at both levels of .01 and .05.
- For boys ($r=0.001$, $t$-value=0.0167) : not significant even at .05 levels.
- For girls ($r=0.070$, $t$-value=1.4984) : not significant even at .05 levels.
- For urban students ($r=0.036$, $t$-value=0.5973) : not significant even at .05 levels.
- For rural students ($r=0.177$, $t$-value=3.8613) : significant at .01 and .05 levels.
- For government school students ($r=0.132$, $t$-value=2.2871) : significant only at .05 levels.
- For aided school students ($r=0.133$, $t$-value=2.2293) : significant only at .05 levels.
- For unaided school students ($r=0.039$, $t$-value=0.4982) : not significant even at .05 levels.
Comparison of correlation coefficients between Examination and anxiety and Achievement in Biology for the sub samples

Significance of difference in the correlation between examination anxiety and achievement in biology for the sub samples is measured through the test of significance of difference between two r’s.

The difference in the relation of examination anxiety and achievement in biology is not significant between; boys (N=282, r =0.001) and girls (N=458, r =0.070) do not reveal significant difference in the two r’s (CR =0.907, p>.05) at any of the levels. Urban students (N=277, r =0.036) and rural students (N=463, r =0.177) do not reveal significant difference in the two r’s (CR=1.847, p>.05) at any of the levels. Government school students (N=297, r =0.132) and aided school students (N=278, r =0.133) do not reveal significant difference in the two r’s (CR=0.012, p>05) at any of the levels. Government school students (N=297, r =0.132) and unaided school students (N=165, r =0.039) do not reveal significant difference in the two r’s (CR=0.950, p>05) at any of the levels. Aided school students (N=278, r =0.133) and unaided school students (N=165, r =0.039) do not reveal significant difference in the two r’s (CR=0.949, p>05) at any of the levels.

B. Correlation of Study Habits and Achievement in Biology

The correlation of study habits and achievement in biology is measured through Pearson’s product moment coefficient of correlation. The relationship is in the range of high and moderate and is also positive; for the whole sample and sub sample based on gender, locale of the institution and the type of management. These relationships are summarized as follows.
• For the whole sample ($r=0.656, t\text{-value}=23.6114$) : significant at both levels of .01 and .05.

• For boys ($r=0.724, t\text{-value}=17.5628$) : significant at both levels of .01 and .05.

• For girls ($r=0.563, t\text{-value}=14.5469$) : significant at both levels of .01 and .05.

• For urban students ($r=0.706, t\text{-value}=16.5313$) : significant at both levels of .01 and .05.

• For rural students ($r=0.617, t\text{-value}=16.8337$) : significant at .01 and .05 levels.

• For government school students ($r=0.657, t\text{-value}=14.9681$) : significant at .01 and .05 levels.

• For aided school students ($r=0.744, t\text{-value}=18.4984$) : significant at .01 and .05 levels.

• For unaided school students ($r=0.494, t\text{-value}=7.2538$) : significant at .01 and .05 levels.

Comparison of correlation of coefficients between study habits and achievement in Biology for the sub samples

Significance of difference in the correlation between study habits and achievement in biology for the sub samples is measured through the test of significance of difference between two $r$’s.

The difference in the relation of study habits and achievement in biology is significant between; Boys (N=282, $r=0.724$) and girls (N=458, $r=0.563$) reveal significant difference in the two $r$’s (CR =3.682, $p>.01$) at both of the levels. Urban students (N=277, $r=0.706$) and rural students (N=463, $r=0.616$) do not reveal significant difference in the two $r$’s (CR=1.830, $p>.05$) at any of the levels. Government school students (N=297, $r=0.657$) and aided school students (N=278, $r=0.744$) do not reveal significant difference in the two $r$’s.
(CR=1.907, p>0.05) at any of the levels. Government school students (N=297, r =0.657) and unaided school students (N=165, r =0.494) reveal significant difference in the two r’s (CR=2.554, p<0.05) at .05 of the levels. Aided school students (N=278, r =0.744) and unaided school students (N=165, r =0.494) reveal significant difference in the two r’s (CR=4.139, p<.01) at .01 of the levels.

C. Correlation of Self Concept and Achievement in Biology

The correlation of self concept and achievement in biology is measured through Pearson’s product moment coefficient of correlation. The relationship is moderate and positive; for the whole sample and sub sample based on gender, locale of the institution and the type of management. These relationships are summarized as follows.

- For the whole sample (r=0.469, t-value=14.4258) ; significant at both levels of .01 and .05.
- For boys (r=0.509 , t-value=9.8949) ; significant at both levels of .01 and .05.
- For girls (r=0.422 , t-value=9.9398) : significant at both levels of .01 and .05.
- For urban students (r=0.476, t-value=8.9756) : significant at both levels of .01 and .05.
- For rural students (r=0.458, t-value=11.0620) : significant at .01 and .05levels
- For government school students (r=0.435, t-value=8.2975) : significant at .01 and .05levels
- For aided school students (r=0.526, t-value=10.2748) : significant at .01 and .05levels
• For unaided school students (r=0.444, t-value=6.3263): significant at .01 and .05 levels

**Comparison of correlation coefficients between Self Concept and Achievement in Biology for the sub samples**

Significance of difference in the correlation between self concept and achievement in biology for the sub samples is measured through the test of significance of difference between two r’s.

The difference in the relation of self concept and achievement in biology is not significant between; Boys (N=282, r=0.509) and girls (N=458, r=0.422) do not reveal significant difference in the two r’s (CR=0.1446, p>.05) at any of the levels. Urban students (N=277, r=0.476) and rural students (N=463, r=0.458) do not reveal significant difference in the two r’s (CR=0.262, p>.05) at any of the levels. Government school students (N=297, r=0.435) and aided school students (N=278, r=0.526) do not reveal significant difference in the two r’s (CR=1.430, p>.05) at any of the levels. Government school students (N=297, r=0.435) and unaided school students (N=165, r=0.444) do not reveal significant difference in the two r’s (CR=0) at any of the levels. Aided school students (N=278, r=0.526) and unaided school students (N=165, r=0.444) do not reveal significant difference in the two r’s (CR=1.211, p>.05) at any of the levels.

**D. Correlation of home learning environment and achievement in biology.**

The correlation of home learning environment and achievement in biology is measured through Pearson’s product moment coefficient of correlation. The relationship is high and positive; for the whole sample and sub sample based on
gender, locale of the institution and the type of management. These relationships are summarized as follows.

- For the whole sample \( (r=0.753, t\text{-value}=31.0873) \); significant at both levels of .01 and .05.
- For boys \( (r=0.779, t\text{-value}=20.7889) \); significant at both levels of .01 and .05.
- For girls \( (r=0.704, t\text{-value}=21.1677) \); significant at both levels of .01 and .05.
- For urban students \( (r=0.765, t\text{-value}=19.6979) \); significant at both levels of .01 and .05.
- For rural students \( (r=0.737, t\text{-value}=23.4120) \); significant at .01 and .05 levels.
- For government school students \( (r=0.755, t\text{-value}=19.7759) \); significant at .01 and .05 levels.
- For aided school students \( (r=0.779, t\text{-value}=20.6399) \); significant at .01 and .05 levels.
- For unaided school students \( (r=0.719, t\text{-value}=13.2078) \); significant at .01 and .05 levels.

**Comparison of correlation coefficients between home learning environment and achievement in Biology for the sub samples**

Significance of difference in the correlation between home learning environment and achievement in biology for the sub samples is measured through the test of significance of difference between two \( r \)'s.

The difference in the relation of home learning environment and achievement in biology is significant between; Boys \( (N=282, r =0.779) \) and girls
(N=458, r =0.704) reveal significant difference in the two r’s (CR =2.367,p<.05) at .05 of the levels. Urban students (N=277,r =0.765) and rural students (N=463,r =0.737) do not reveal significant difference in the two r’s (CR=1.310,p>.05) at any of the levels. Government school students (N=297,r =0.755) and aided school students (N=278,r =0.779) do not reveal significant difference in the two r’s (CR=0.596,p>.05) at any of the levels. Government school students (N=297,r =0.755) and unaided school students (N=165,r =0.719) do not reveal significant difference in the two r’s (CR=0.919,p>.05) at any of the levels. Aided school students (N=278,r =0.779) and unaided school students (N=165,r =0.719) do not reveal significant difference in the two r’s (CR=1.413,p>.05) at any of the levels.

**Partial correlation of Examination Anxiety and Achievement in Biology**

The partial correlation for the whole sample is negative and not significant even at .05 levels. The partial correlation coefficients for the sub samples are concerned; it is negative and not significant even at .05 levels for boys, girls, urban, government and unaided students whereas it is positive for rural and aided school students but not significant even at .05 levels. So it can be concluded that examination anxiety and achievement in biology for the whole sample and sub samples shows a trend of negative and insignificant relation to each other.

The values for the whole sample (0.-014), for boys (0.-081), for girls (0.-012), for urban students (0.-046), for rural students (0.009), for government school students (0.-064), for aided school students (0.101) and for unaided school students (0.-060). In all these cases ,the values of partial correlation coefficients are less than the respective values of Pearson’s product moment coefficient of correlation ‘r’ between examination anxiety and achievement in biology for the whole sample.
and different subsample based on gender, locale of the institution and the type of management of the schools.

**Partial correlation of Study Habits and Achievement in Biology**

The partial correlation for the whole sample and sub samples were positive and significant at .01 levels except in the case of unaided school students; where it was not significant even at .05 levels. So it can be concluded that study habits and achievement in biology for the whole sample and sub samples shows a trend of positive and significant relation to each other.

The values for the whole sample (0.264), for boys (0.336), for girls (0.194), for urban students (0.346), for rural students (0.215), for government school students (0.274), for aided school students (0.376) and for unaided school students (0.106). In all these cases ,the values of partial correlation coefficients are less than the respective values of Pearson’s product moment coefficient of correlation ‘r’ between study habits and achievement in biology for the whole sample and different sub sample based on gender, locale of the institution and the type of management of the schools

**Partial correlation of Self Concept and Achievement in Biology**

The partial correlation for the whole sample was positive and significant at .05level. The partial correlation of sub samples; boys, girls and rural students it was positive and significant at .05 levels but in the case of unaided school students it was significant at .01 levels. Whereas the partial correlation of urban, government and aided students; it was not significant even at .05levels but positive. So it can be
concluded that self concept and achievement in biology for the whole sample and sub samples shows a trend of positive and significant relation to each other.

The values for the whole sample (0.106), for boys (0.161), for girls (0.093), for urban students (0.022), for rural students (0.144), for government school students (0.034), for aided school students (0.113) and for unaided school students (0.260). In all these cases ,the values of partial correlation coefficients are less than the respective values of Pearson’s product moment coefficient of correlation ‘r’ between self concept and achievement in biology for the whole sample and different subsample based on gender, locale of the institution and the type of management of the schools.

**Partial correlation of Home Learning Environment and Achievement in Biology.**

The partial correlation for the whole sample and sub samples were positive and significant at .01 levels. So it can be concluded that home learning environment and achievement in biology for the whole sample and sub samples were positively and significantly related to each other.

The values for the whole sample (0.529), for boys (0.497), for girls (0.528), for urban students (0.518), for rural students (0.531), for government school students (0.535), for aided school students (0.511) and for unaided school students (0.587). In all these cases ,the values of partial correlation coefficients are less than the respective values of Pearson’s product moment coefficient of correlation ‘r’ between home learning environment and achievement in biology for the whole sample and different subsample based on gender, locale of the institution and the type of management of the schools.
3. FINDINGS BASED ON THE THIRD OBJECTIVE

Effect of examination anxiety on achievement in biology

The effect of examination anxiety on achievement in biology (F value=4.537) is significant among the three groups of students based on the level of examination anxiety and it is significant at .05 level.

Further, while conducting the group’s comparison through Scheffe’s multiple comparison method it is found that significant differences exist only in one paired groups (High-Low), which is significant only at .05 levels.

Effect of study habits on achievement in biology

The effect of study habits on achievement in biology (F value = 216.377) is significant among the three groups of the students based on the level of study habits and it is significant at .01 level.

Further, while conducting the group’s comparison; through Scheffe’s multiple comparison method it is found that significant differences exist in all the paired groups ;( High-Average, High-Low, Average-Low) and it is significant at .05 levels only.

Effect of self concept on achievement in biology

The effect of self concept on achievement in biology (F value= 71.033) is significant among the three groups of the students based on the level of self concept and it is significant at .01 level.

Further, while conducting the group’s comparison; through Scheffe’s multiple comparison method it is found that significant differences exist in all the
three paired groups (High-Average, High-Low, and Average-Low) and it is significant at .05 levels only.

**Effect of home learning environment on achievement in biology**

The effect of home learning environment on achievement in biology ($F$ value =283.200) is significant among the three groups of the students based on the level of home learning environment and it is significant at .01 level.

Further, while conducting the group comparison, through Sceheffe’s multiple comparison method it is found that significant differences exists in all the three paired groups (High- Average, High- Low and Average-Low) and it is significant at both levels of .01 and.05.

**6.3 TENABILITY OF HYPOTHESES**

The first hypothesis states that there exists a significant relationship between the correlates of achievement motivation and achievement in biology among the students at higher secondary level.

From the values of coefficient of correlation it can be interpreted that the relationship of examination anxiety and achievement in biology is significant for the sample.

The relationship of examination anxiety and achievement in biology is not significant in the case of the gender and locale of the institutions. the relationship is partially significant when the management of institutions is concerned.
From the values of coefficient of correlation it can be interpreted that the relationship of study habits and achievement in biology is significant for the sample and for the sub samples.

From the values of coefficient of correlation it can be interpreted that the relationship of self concept and achievement in biology is significant for the sample and for the sub samples.

From the value of coefficient of correlation it can be interpreted that the relationship of home learning environment and achievement in biology is significant for the sample and for the sub samples.

From the value of coefficient of partial correlation it can be interpreted that the relationship between examination anxiety and achievement in biology with study habits, self concept and home learning environment partialled out is not significant for the sample and for the sub samples.

From the values of coefficient of partial correlation it can be interpreted that the relationship between study habits and achievement in biology with self concept, home learning environment and examination anxiety partialled out is significant for the sample. As far as the sub samples are concerned it is significant for the Gender and Locale of the institution, but in case of the Management it is significant in two cases and not significant in one case.

From the value of coefficient of partial correlation it can be interpreted that the relationship between self concept and achievement in biology with home learning environment, examination anxiety and study habits partialled out is significant for the sample. As far as the sub samples are concerned it is significant in some cases and not significant in some other cases.
From the value of coefficient of partial correlation it can be interpreted that the relationship between home learning environment and achievement in biology with selfconcept, examination anxiety and study habits partialled out is significant for the sample and for the sub samples.

So the first hypothesis is not fully substantiated.

The second hypothesis states that the effect of the select correlates of achievement motivation on achievement in biology is not significant among the students at the higher secondary schools.

The analysis of variance of the correlates of achievement motivation on achievement in biology proved that the effect is significant among the students at the higher secondary schools.

So the second hypothesis is rejected.

6.4 CONCLUSIONS OF THE STUDY

The major conclusions arrived at from this study are the following.

Conclusion I

The level of the variables is ascertained by grouping the sample into high, average and low. In the case of all the five variables; the average group shows high percentage in the level of attainment than that of the other two groups. But the high and low group does not exhibit a uniform pattern in the level of attainments. The level changes with the change of the variable. The variable like study habits, home learning environment and achievement in biology shows that the percentage of high group is greater than that of low group. But in the case of other two variables such as examination anxiety and self concept the percentage of low group is greater than that of high group.
Conclusion II

a) There is negligible and positive relation between examination anxiety and achievement in biology for the whole sample and sub samples. For every unit increase or decrease in examination anxiety score there will be a corresponding increase or decrease in the achievement in biology.

b) There is high to moderate and positive relation between study habits and achievement in biology for the whole sample and sub samples. For every unit increase or decrease in examination anxiety score there will be a corresponding increase or decrease in the achievement in biology.

c) There is moderate and positive relation between self concept and achievement in biology for the whole sample and sub samples. For every unit increase or decrease in examination anxiety score there will be a corresponding increase or decrease in the achievement in biology.

d) There is high and positive relation between home learning environment and achievement in biology for the whole sample and sub samples. For every unit increase or decrease in examination anxiety score there will be a corresponding increase or decrease in the achievement in biology.

Conclusion III

There is difference in the coefficient of correlation between achievement in biology and each of the four selected independent variables. But this difference is statistically significant between pairs of sub samples only.
Conclusion IV

a) The relation between examination anxiety and achievement in biology is negative and not significant when the effect of study habits, self concept and home learning environment are partialled out using partial correlation technique for the whole sample and sub samples.

b) The relation between study habits and achievement in biology is positive and significant when the effect of examination anxiety, self concept and home learning environment are partialled out using partial correlation technique for the whole sample and sub samples.

c) The relation between self concept and achievement in biology is positive and significant when the effect of examination anxiety, study habits and home learning environment are partialled out using partial correlation technique for the whole sample and sub samples.

d) The relation between home learning environment and achievement in biology is positive and significant when the effect of examination anxiety, study habits and self concept are partialled out using partial correlation technique for the whole sample and sub samples.

Conclusion V

All the four independent variables such as examination anxiety, study habits, self concept and home learning environment have significant effect on achievement in biology; except in the case of examination anxiety.

6.5 IMPLICATIONS OF THE STUDY

The study is on the correlates of achievement motivation and academic achievement. The two vital concepts associated with the learning process; the concepts are normally directly proportionate in nature. Achievement motivation is
a multidimensional character, where a fusion of psychological and sociological components can be seen. The correlates of achievement motivation such as study habits, examination anxiety, self-concept and home learning environments have had decisive influence upon the academic achievement. The study reveals this influence more precisely among the higher secondary students.

The study shows that the variables Study habits, self-concept and home learning environments are directly proportionate to academic achievement whereas the variable examination anxiety is reversely proportionate to academic achievement. A student with good study habits, healthy and positive self-concept, proper and congenial home learning environment has higher level of academic achievement. In the case of examination anxiety low level of academic achievement is the hallmark of the students with high level of examination anxiety.

Another observation from the study is that most of the students fall in the category of “Average” as far as all the variables taken together. This shows that our students at the higher secondary stage are average in their level of the correlates of achievement motivation. The future of the nation rests in the hands of these children. If they are average in their abilities and level of motivation, future of the country is not a promising one because human resources is the premier resource for a country like India. So we have to do a lot more for improving the threshold and potential of achievement motivation among our students. Then only we can reduce the time, the finance and other resources for the transformation of our country from the developing to that of a developed nation.

At this juncture the investigator suggests the following implications on the light of the findings from the study.
• Development of a proper study habits is essential for better academic achievement. So a good study habits may cultivate from the earlier classes onwards.

• It is the responsibility of the parents to provide a hazel free domestic environment for learning to their wards.

• It may be the duty of the school authorities to provide ample opportunities for the parents to involve and to interact with the academic activities of their children.

• It is advisable to conduct motivational programs in the school with the help and cooperation of the local community.

• Examination anxiety reducing techniques may be practiced from smaller classes onwards.

• The home learning environments of the students are varying in character. It is the responsibility of the teachers to identify the deficit among the students and suggest appropriate compensatory measures to the concerned parents.

• The development of a healthy and positive self-concept is vital for the progress of the individual. This point may be kept in mind by the teacher in his dealings with the students, especially the late adolescent one’s like the Higher secondary students.

• Understanding of one’s own self is essential for the better academic achievement. Teachers create opportunities for the development of self-concept through academic and non-academic activities.
The policy makers of education consider the above mentioned observations in a positive frame of mind; definitely we have to create a new generation which have the urge and appetite for a better and bright future.

6.6 SUGGESTIONS FOR FURTHER STUDY

In the present study the investigator studied the effect of select correlates of achievement motivation such as examination anxiety, study habits, self concept and home learning environment; which are identified as the correlates of achievement motivation upon the achievement in biology of the higher secondary students. As the study is limited to find out the effect of these variables on the higher secondary school students it will reveal the total picture of the present situation in the selected field of study. In this context the investigator proposes the following suggestions for further study.

1) The present study is conducted among the higher secondary school students. It can be studied in students at the other levels of Education.

2) The present study had selected students from six districts of Kerala. This study can be repeated on a state wide sample.

3) The study can be conducted in other disciplines of higher secondary level.

4) The present study can replicate into an experimental study by choosing the disadvantaged students as the experimental group.

5) A similar study about the effect of other components of achievement motivation on achievement can be conducted by using other independent variables such as level of aspiration, intelligence, and creativity.

The investigator desires to draw the attention of the educationists, the teachers and the parents about the importance of achievement motivation among the students in their late adolescents. In this blossoming age; individual has to
develop many of the life skills to harvest the best in his life. The efforts for this to a great extent depend on his level of achievement motivation.

The investigator hopefully believed that the findings of the present study inspires all those for evolving a teaching learning environment which recognizes the importance of achievement motivation in the academic achievement and also in the day to day living of an individual.