CHAPTER 4

RESULTS: INTERPRETATION AND DISCUSSION

4.1 Results of Correlational Studies

4.1.1 Relationship between Reading Comprehension in English & Anxiety of Students

4.1.2 Relationship between Reading Comprehension in English & Socio-Economic Status of Students

4.1.3 Relationship between Reading Comprehension in English & School Environment

4.1.4 Combined effect of Anxiety, Socio-Economic Status & School Environment on Reading Comprehension in English.

4.2 Results of Differential Studies

4.2.1 Difference of Reading Comprehension in English in Boys & Girls.

4.2.2 Difference of Reading Comprehension in English in Students of Urban & Rural Area.

4.3 Results of Interactional Studies

4.3.1 A ANOVA of the (2 x 2 x 2) Factorial Design for Reading Comprehension in English.

4.3.1 B An Interactional effects of Anxiety, Socio-Economic Status and School Environment on Reading Comprehension in English

4.4 Results at a Glance

4.5 Interpretation and Discussion

4.5.1 Influence of Psychological Variable on RC in English: Anxiety on RC in English

4.5.2 Influence of Social Variables on RC in English

4.5.2.1 Influence of Socio-Economic Status on RC in English

4.5.2.2 Influence of School Environment on RC in English

4.5.3 Influence of Sex Difference on RC in English

4.5.4 Influence of Locale on RC in English
CHAPTER – 4
RESULTS: INTERPRETATION AND DISCUSSION

The hypotheses formulated in chapter 1 have been put to test in previous chapters and the data obtained thereupon have been processed and statistically treated. In the present chapter, results obtained on various hypotheses have been sequentially presented, meaningfully interpreted and critically discussed keeping in view the findings traced in the related literature. The sequence of presentation of the findings of hypotheses have been given as under :-

(i) Correlational studies.
(ii) Differential studies.
(iii) Interactional studies.

The results, their interpretation and discussion have been sequentially presented as under :-

4.1 Results of Correlational Studies

Hypotheses CH1-CH4 deal with the relationship of Reading Comprehension in English (RC in English) with Anxiety, Socio-Economic Status (SES) & School Environment (SE).

With a view to test the tenability of these hypotheses, Pearson's Product Moments Coefficient of Correlation have been computed for the scores of RC in English and the scores of Anxiety, SES and SE.

4.1.1 Relationship between Reading Comprehension in English & Anxiety of Students

HYPOTHESIS : CH1

"There is an inverse correlation between Anxiety and Reading Comprehension in English in students."
Stated in other words, "The scores of Anxiety and the scores of RC in English of students of class XI will show a negative correlation."

It has been observed & found in the previous researches that anxiety affects the curiosity of students which in turn reduces the functioning of cognitive abilities & capacities like logical thinking, keen observation, questioning etc., and because of these the comprehension as such is affected.

For a student who studies English as a second language, these factors affect more in cognising the new era of knowledge, which gives a poor comprehension in English. These have been seen in many results of the previous studies, which showed very poor correlation between Anxiety & RC in English. Keeping these results in view the above hypothesis have been framed.

With the view to test the tenability of the hypothesis Anxiety scores of boys, girls and boys & girls combined together were correlated separately with the scores of Reading Comprehension in English of the students, by the Pearson's Product Moment method. The coefficient of correlations so computed, have been presented in the table No. 4.1.

**Table No. 4.1**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Category</th>
<th>r</th>
<th>df</th>
<th>Correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boys</td>
<td>-0.0654</td>
<td>545</td>
<td>Negative</td>
<td>NS</td>
</tr>
<tr>
<td>2.</td>
<td>Girls</td>
<td>-0.02466</td>
<td>411</td>
<td>Negative</td>
<td>NS</td>
</tr>
<tr>
<td>3.</td>
<td>Boys &amp; Girls</td>
<td>-0.0394</td>
<td>958</td>
<td>Negative</td>
<td>NS</td>
</tr>
</tbody>
</table>

An inspection of the table No. 4.1 reveals that:

1. Anxiety & Reading Comprehension in English are correlated negatively in:
a) boys separately.
b) girls separately.
c) boys & girls both.

2. All the above correlations are found insignificant.
   \( r = -0.0654 \text{ df} = 545, \text{ NS}; r = -0.02466 \text{ df} = 411, \text{ NS}; r = -0.0394 \text{ df} = 958, \text{ NS} \)

   The above results reveal that Anxiety and RC in English are negatively correlated in boys (df= 545, r= - 0.0654, NS), girls (df=411, r = - 0.02466, NS) and boys & girls together (df = 958, r= - 0.0394, NS), though the correlations are not significant.

   On the strength of the result presented above, we retain the hypothesis \( CH_1 \) and conclude that Anxiety is correlated negatively but insignificantly with RC in English.

4.1.2 Relationship between Reading Comprehension in English & Socio-Economic Status of Students

HYPOTHESIS : \( CH_2 \)

"There is positive correlation between Socio-Economic Status and Reading Comprehension in English in Students."

In other words the above hypothesis can be stated as, "The scores of Socio-Economic Status (SES) of the students will show positive correlation with the scores obtained on the Reading Comprehension test in English."

Number of researches pertaining to these variables, already mentioned in the previous chapter, reveal that the higher the Socio-Economic background, the higher the Reading Comprehension level. This indicates a positive correlation between SES and RC in English. This fact gave the basis to frame the present hypothesis. In order to test hypothesis \( CH_2 \) the scores obtained by the students on the test of SES and RC in English were systematically analysed and statistically treated by Pearson's
Product Moment coefficient of correlation, and the results obtained have been presented in the table No. 4. 2.

Table No. 4. 2

Coefficient of Correlation between SES & RC in English

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Category</th>
<th>r</th>
<th>df</th>
<th>Correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boys</td>
<td>0.2652</td>
<td>545</td>
<td>Positive</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td>2.</td>
<td>Girls</td>
<td>0.3720</td>
<td>411</td>
<td>Positive</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td>3.</td>
<td>Boys &amp; Girls</td>
<td>0.3305</td>
<td>958</td>
<td>Positive</td>
<td>P&lt;.01</td>
</tr>
</tbody>
</table>

An inspection of the table No.4.2 reveals that:

(1) Boys, girls and boys & girls together have the positive correlation of SES and RC in English.

(2) The correlation between SES and RC in English in boys & girls, boys & girls separately are found to be positively significant \((r=0.3305 \text{ df}=958, P<0.01; r=0.2652 \text{ df}=545, P<0.01; r=0.3720 \text{ df}=411, P<0.01\) respectively).

On the strength of the above results it is concluded that there is a positive and significant correlation between SES & RC in English in students.

Thus, we retain our hypothesis \(CH_2\) and conclude that there exists positive linear significant correlation between SES & RC in English.

4.1.3 Relationship between Reading Comprehension in English & School Environment

HYPOTHESIS : \(CH_3\)

"There is positive correlation between School Environment and Reading Comprehension in English in Students."
The present hypothesis can be stated more specifically as – "The scores of School Environment (SE) test & the scores of Reading Comprehension (RC) test of the students will show the positive correlation."

On the basis of researches done on the effect of SE & RC in English, it has been evident that better the schools and their academic climate with better facilities, the better the scholastic achievement in the students. The related findings have already been shown in the previous chapter. On the basis of these research evidences, the present directional hypothesis has been framed. With the view to putting this hypothesis to test, Pearson’s Product Moment correlation (r) between the scores of SE & the scores of RC in English of the students have been computed. The coefficients of correlation found are presented in the table No. 4.3.

Table No. 4.3

Coefficient of correlation between SE & RC in English

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Category</th>
<th>r</th>
<th>df</th>
<th>Correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boys</td>
<td>0.06013</td>
<td>545</td>
<td>Positive</td>
<td>NS</td>
</tr>
<tr>
<td>2.</td>
<td>Girls</td>
<td>0.1148</td>
<td>411</td>
<td>Positive</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>3.</td>
<td>Boys &amp; Girls</td>
<td>0.0921</td>
<td>958</td>
<td>Positive</td>
<td>P&lt;0.01</td>
</tr>
</tbody>
</table>

An inspection of the table No. 4.3 reveals that:-

1. Boys, girls separately and boys & girls together have positive correlation between SE & RC in English

2. a) The boys separately show a positive correlation (r= 0.06013 df = 545) ; but the correlation is not significant.
   b) The coefficient of correlation for the girls separately shows a positive and significant correlation at the moderate level of significance (r=0.1148 df = 411, P<0.05).
   c) Boys & girls together show a positive & significant
correlation at the high level of significance \( r = 0.0921 \), \( df = 958; P < 0.01 \).

On the strength of the above results we accept our hypothesis CH\(_3\) and conclude that there exists a positive linear significant correlation between SE & RC in English.

### 4.1.4 Combined effect of Anxiety, Socio-Economic Status & School Environment on Reading Comprehension in English

**HYPOTHESIS : CH\(_4\)**

"*There is significant combined effect of Anxiety, Socio - Economic Status & School Environment on Reading Comprehension in English.*"

Specifically the present hypothesis can be stated as:

a) Partialing out the effect of SE, Anxiety & SES combined together have significant effect on RC in English.

b) Partialing out the effect of Anxiety, SES & SE combined together have significant effect on RC in English.

c) Partialing out the effect of SES, Anxiety & SE combined together have significantly effect on RC in English.

d) Anxiety, SES and SE combined together have significant effect on RC in English.

To examine the hypothesis, the data obtained from the tests of Anxiety, SES, SE & RC in English, were taken and analysed. To test the every part of the present hypothesis as mentioned above, the data have been obtained & treated for partial correlations, \( \beta \) coefficients, coefficient of multiple correlation (R) & significance of R.

Coefficient of multiple correlation (R) have been expressed in terms of \( \beta \) coefficient and the Zero order 'r' values. For this the following expressions have been used :-
(1) $R^2_{1(23)} = \beta_{12.3}. r_{12} + \beta_{13.2}. r_{13}$, for combined effect of Anxiety & SES on RC in English.

(2) $R^2_{1(34)} = \beta_{13.4}. r_{13} + \beta_{14.3}. r_{14}$, for combined effect of SES & SE on RC in English.

(3) $R^2_{1(42)} = \beta_{14.2}. r_{14} + \beta_{12.4}. r_{12}$, for combined effect of SE & Anxiety on RC in English.

(4) $R^2_{1(234)} = \beta_{12.34}. r_{12} + \beta_{13.24}. r_{13} + \beta_{14.23}. r_{14}$ for combined effect of Anxiety, SES & SE on RC in English.

The variables undertaken for the present study are given serially as below:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Classification of variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Reading Comprehension in English</td>
<td>Dependent</td>
</tr>
<tr>
<td>2.</td>
<td>Anxiety</td>
<td>Independent</td>
</tr>
<tr>
<td>3.</td>
<td>Socio-economic status</td>
<td>Independent</td>
</tr>
<tr>
<td>4.</td>
<td>School Environment</td>
<td>Independent</td>
</tr>
</tbody>
</table>

The statistical values found have been presented in table No.4.4(a), 4.4(b), 4.4(c), 4.4(d)

(a) **Joint effects of Anxiety & SES on RC in English**

### Table No. 4.4(a)

<table>
<thead>
<tr>
<th>$\beta$ co-efficients and zero order 'r' values</th>
<th>Multiple correlation</th>
<th>$SE_R$</th>
<th>95% Confidence Interval</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_{12.3}. r_{12}$</td>
<td>$\beta_{13.2}. r_{13}$</td>
<td>$R^2_{1(23)}$</td>
<td>$R_{1(23)}$</td>
<td>0.0287</td>
</tr>
<tr>
<td>0.0022</td>
<td>0.1101</td>
<td>0.1123</td>
<td>0.3351</td>
<td></td>
</tr>
</tbody>
</table>
It is evident from the table No. 4.4(a) that the correlational effect of Anxiety & SES on RC in English came out to be significant ($R_{1(23)} = 0.3351$).

From the value of coefficient of multiple correlation ($R$) ($R_{1(23)}^2 = 0.1123$) we can also conclude that about 11% of the variance of RC in English is accounted for by variation in Anxiety & SES joint together and the rest about 89% of the variance is accounted for the variations not estimated in the present hypothesis.

**Joint effects of SES & SE on RC in English**

**Table No. 4.4(b)**

<table>
<thead>
<tr>
<th>Co- coefficients and zero order 'r' values</th>
<th>Multiple correlation</th>
<th>$SE_r$</th>
<th>.95 Confidence interval</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_{13,4. r_{13}}$</td>
<td>$\beta_{14,3. r_{14}}$</td>
<td>$R_{1(34)}^2$</td>
<td>$R_{1(34)}$</td>
<td>0.0285</td>
</tr>
<tr>
<td>0.1086</td>
<td>0.0078</td>
<td>0.1163</td>
<td>0.3411</td>
<td></td>
</tr>
</tbody>
</table>

It is clear from the table No. 4.4(b) that the correlational effect of SES & SE on RC in English came out to be significant ($R_{1(34)} = 0.3411$).

From the table value of coefficient of multiple correlation ($R$) ($R_{1(34)}^2 = 0.1164$) we can conclude that about 12% of the variance of RC in English is accounted for by variation in SES & SE joint together, and the remaining about 88% of the variance is accounted for the variations not estimated in the present hypothesis.
(c) Joint effects of SE & Anxiety on RC in English

Table No. 4.4(c)

Joint effects of SE & Anxiety on RC in English

<table>
<thead>
<tr>
<th>$\beta$ co-efficients and zero order 'r' values</th>
<th>Multiple correlation</th>
<th>SE$_R$</th>
<th>.95 Confidence Interval</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_{14.2} \cdot r_{14}$</td>
<td>$\beta_{12.4} \cdot r_{12}$</td>
<td>$R^2_{(42)}$</td>
<td>$R_{1(42)}$</td>
<td>0.0320</td>
</tr>
<tr>
<td>0.0083</td>
<td>0.0016</td>
<td>0.0099</td>
<td>0.0994</td>
<td></td>
</tr>
</tbody>
</table>

It is evident from the table No. 4.4(c) that the correlation value of Anxiety & SE joint together with RC in English is $R_{1(42)} = 0.0994$, which is significant.

The value of coefficient of multiple correlation (R) ($R^2_{(42)} = 0.0099$) means that only about 1% of the variance of RC in English is accounted for by variation in Anxiety & SE joint together and about 99% of the variance is accounted for the variations not estimated in the present hypothesis.

(d) Joint effects of Anxiety, SES & SE on RC in English

Table No. 4.4 (d)

Joint effects of Anxiety, SES & SE on RC in English

<table>
<thead>
<tr>
<th>$\beta$ co-efficients and zero order 'r' values</th>
<th>Multiple correlation</th>
<th>SE$_R$</th>
<th>.95 Confidence Interval</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_{12.34} \cdot r_{12}$</td>
<td>$\beta_{13.24} \cdot r_{13}$</td>
<td>$\beta_{14.23} \cdot r_{14}$</td>
<td>$R^2_{(234)}$</td>
<td>$R_{1(234)}$</td>
</tr>
<tr>
<td>0.0021316</td>
<td>0.1095597</td>
<td>0.0081062</td>
<td>0.2375</td>
<td>0.4873</td>
</tr>
</tbody>
</table>

It is shown in the table No. 4.4(d) that the correlation value of Anxiety, SES & SE joint together with RC in English is $R_{1(234)} = 0.4873$, which is significant.
From the table value of coefficient of multiple correlation (R) \( R^2_{(234)} = 0.2375 \) we conclude that about 24% of the variance of RC in English is accounted for by variation in Anxiety, SES & SE combined together and about 76% of the variance is accounted for the variation not estimated in the present study.

On the strength of the above results it is evident that the joint effects of the factors in pairs viz., Anxiety & SES, SES & SE & Anxiety & SE show a significant effect on RC in English. Further, the joint effects of Anxiety, SES & SE on RC in English also show the significant effect on RC in English.

Therefore, on the basis of the above results we retain our hypothesis \( CH_4 \) and conclude that there is a significant combined effect of Anxiety, SES & SE on RC in English.

4.2 Results of Differential Studies

The hypotheses hereafter are pertaining to see the differences of the means of the variables and the interactional effects on the dependent variables of the varied independent variables.

Before anyalysing and testing these hypotheses it was desirable to see the variability of the values found for the dependent variable from the sample taken. To apply ANOVA for the (2x2x2) factorial design the data were tested for homogeneity of the variance by employing Kolmogrov-Smirnov Test of Goodness of Fit for the homogeneity of variance.

Kolmogrov-Smirnov Test of Goodness of Fit for the distribution of scores in five class intervals have been shown in table No. 4.5.
Table No. 4.5  
Kolmogrov – Smirnov Test of Goodness of Fit for Reading Comprehension Test of Class XI

<table>
<thead>
<tr>
<th>CI</th>
<th>f</th>
<th>F</th>
<th>$C_{po}$</th>
<th>$C_{pe}$</th>
<th>$C_{po} - C_{pe}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>50-54</td>
<td>0</td>
<td>960</td>
<td>1.000</td>
<td>1.000</td>
<td>0.998 + 0.002</td>
</tr>
<tr>
<td>45-49</td>
<td>18</td>
<td>960</td>
<td>1.000</td>
<td>0.998</td>
<td>-0.0168</td>
</tr>
<tr>
<td>40-44</td>
<td>56</td>
<td>942</td>
<td>0.9812</td>
<td>0.998</td>
<td>-0.029</td>
</tr>
<tr>
<td>35-39</td>
<td>72</td>
<td>886</td>
<td>0.9229</td>
<td>0.952</td>
<td>-0.029</td>
</tr>
<tr>
<td>30-34</td>
<td>129</td>
<td>814</td>
<td>0.8479</td>
<td>0.855</td>
<td>-0.007</td>
</tr>
<tr>
<td>25-29</td>
<td>224</td>
<td>685</td>
<td>0.7135</td>
<td>0.677</td>
<td>+0.036</td>
</tr>
<tr>
<td>20-24</td>
<td>200</td>
<td>461</td>
<td>0.480</td>
<td>0.449</td>
<td>+0.031</td>
</tr>
<tr>
<td>15-19</td>
<td>201</td>
<td>261</td>
<td>0.2718</td>
<td>0.236</td>
<td>+0.035</td>
</tr>
<tr>
<td>10-14</td>
<td>57</td>
<td>60</td>
<td>0.0625</td>
<td>0.093</td>
<td>-0.030</td>
</tr>
<tr>
<td>5-9</td>
<td>03</td>
<td>03</td>
<td>0.00312</td>
<td>0.028</td>
<td>-0.024</td>
</tr>
<tr>
<td>N</td>
<td>960</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Value of Significance for $D$ at .05 = .0438

The abbreviation used in the table are:

$F = $ Cumulative frequency

$C_{po} = $ Obtained Cumulative Proportions

$C_{pe} = $ Expected Cumulative Proportions

As per the above table the value of 'D' is less than 0.0438 which shows the significance limit at .05 level. This clearly shows that the value of 'D' does not show significance which indicate that there existed homogeneity of variance ensuring the application of ANOVA and other differential hypotheses.

Hypotheses $DH_5$ and $DH_6$ have been designed for differential studies.
In the present study Anxiety, Socio-Economic Status and School Environment have been taken as independent variables. The relative effects of these independent variables have been estimated on the Reading Comprehension in English of class XI students which has been taken as the dependent variable.

4.2.1 **Reading Comprehension in English in Boys & Girls**

**HYPOTESIS :** DH 5

*"There is no significant difference in Reading Comprehension in English in Boys & Girls."

Stated in other words – “No significant difference exists in the scores of Reading comprehension in English in boys and girls.” With the view to test the tenability of the hypothesis, the scores of boys & girls separately in Reading Comprehension in English are analysed on the basis of the ‘means’ and ‘t-values.’ The obtained results have been shown in the table No.4.6

**Table No. 4.6**

**Statistical Differentiation of Reading Comprehension in English of Boys & Girls**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sex</th>
<th>Mean</th>
<th>S.D.</th>
<th>N</th>
<th>t-value</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boys</td>
<td>24.7495</td>
<td>8.0898</td>
<td>547</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Girls</td>
<td>26.6634</td>
<td>8.6547</td>
<td>413</td>
<td>3.4893</td>
<td>958</td>
<td>P&lt;01</td>
</tr>
</tbody>
</table>

An inspection of the table No. 4.6 reveals that the mean of girls is M=26.6634 and the mean of boys is M = 24.7495. The ‘t-value’ for these two means is t= 3.4893. The higher mean value of girl’s show their higher level of Reading Comprehension in English than the mean value of boys.
The ‘t-value’ (t=3.4893 df=958, P<.01) indicates that the difference is significant at 0.01 level.

On the strength of the above results, we reject our hypothesis DH₆ and conclude that there exists a significance difference in Reading Comprehension in English in favour of girls.

4.2.2 Reading Comprehension in English in Students of Urban & Rural Areas

HYPOTHESIS : DH₆

"There is no significant difference in Reading Comprehension in English in the Students of Urban & Rural Areas."

With the view to test the tenability of the hypothesis, the data are analysed on the basis of Means, SD’s and t-value. The obtained results have been summarized in the table No. 4.7.

**Table No. 4.7**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Area</th>
<th>Mean</th>
<th>S.D.</th>
<th>N</th>
<th>t-value</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Urban</td>
<td>28.7188</td>
<td>8.6325</td>
<td>480</td>
<td></td>
<td>958</td>
<td>P&lt; 01</td>
</tr>
<tr>
<td>2.</td>
<td>Rural</td>
<td>22.4271</td>
<td>6.8169</td>
<td>480</td>
<td>12.5320</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An inspection of the table No. 4.7 reveals that the mean of students of urban area is M=28.7188 and the mean of students of rural area is M=22.4271. The higher mean of urban area shows the higher Reading Comprehension in English of the students in urban area, and to see
whether this mean difference is significant, t-value has been calculated. The t-value ($t=12.5320, df=258, P<.01$) indicates that the difference is significant at high level ($p<.01$) of confidence.

On the strength of the above result we reject our hypothesis DH$_6$ and conclude that there exists a significant difference in Reading Comprehension in English in favour of the students of urban area.

4.3 Results of Interactional Studies

4.3.1(A) ANOVA of the (2 x 2 x 2 ) Factorial Design for Reading Comprehension in English

In the present study Anxiety, Socio-economic status & School Environment interact as independent variables whose relative effects on Reading Comprehension in English have been estimated. Hypothesis IH$_7$ has been designed to study their interactional effects.

HYPOTHESIS : IH$_7$ (a)

"Relatively, School Environment would show the maximum main effect and Anxiety would show the minimum main effect on Reading Comprehension in English whereas Socio-Economic Status would fall in between these two main effects."

With the view to study the effect of the above interacting factors upon Reading Comprehension in English 2 x 2 x 2 factorial design for analysis of variance (ANOVA) was set up.
ANOVA of the 2 x 2 x 2 Factorial Design for Reading Comprehension in English

<table>
<thead>
<tr>
<th>Class</th>
<th>Independent variables</th>
<th>Factorial design</th>
</tr>
</thead>
<tbody>
<tr>
<td>XI</td>
<td>Anxiety</td>
<td>Socio-economic Status</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table No. 4. 8

ANOVA of the 2 (Anxiety) x 2 (Socio-Economic Status) x 2 (School Environment) Factorial Design for Reading Comprehension in English of Class XI.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Anx)</td>
<td>1</td>
<td>710.5889</td>
<td>710.5889</td>
<td>11.0291</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>B (SES)</td>
<td>1</td>
<td>5303.9225</td>
<td>5303.9225</td>
<td>82.3226</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>C (SE)</td>
<td>1</td>
<td>14.4761</td>
<td>14.4761</td>
<td>0.2246</td>
<td>NS</td>
</tr>
<tr>
<td>Interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AXB</td>
<td>1</td>
<td>3.1720</td>
<td>3.1720</td>
<td>0.04923</td>
<td>NS</td>
</tr>
<tr>
<td>AXC</td>
<td>1</td>
<td>20.1041</td>
<td>20.1041</td>
<td>0.3120</td>
<td>NS</td>
</tr>
<tr>
<td>BXC</td>
<td>1</td>
<td>19.4616</td>
<td>19.4616</td>
<td>0.3020</td>
<td>NS</td>
</tr>
<tr>
<td>AXBXC</td>
<td>1</td>
<td>1200.8262</td>
<td>1200.8262</td>
<td>18.6381</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Errors within</td>
<td>952</td>
<td>61335.949</td>
<td>64.4285</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>959</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is evident from the table No. 4.8 that the main effects of the independent variables on the Reading Comprehension in English are:

1. Relatively, SES has been found to have the greatest main effect on Reading Comprehension in English (F=82.3226, df=1; 952, p<.01).
2. The effect of Anxiety has also been found affecting Reading Comprehension in English significantly \((F=11.0291, \text{df}=1; 952, p<.01)\) and could be ranked second in position.

3. The effect of School Environment which had been taken as the third main variance has not been estimated significant on Reading Comprehension in English \((F=0.2246, \text{df}=1; 952, \text{NS})\). This main effect could be ranked the lowest. These results can be more objectively presented as under.

<table>
<thead>
<tr>
<th>Position</th>
<th>Hypothesised Main effects</th>
<th>Obtained Main effects</th>
<th>Significance of obtained main effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatest</td>
<td>School Environment</td>
<td>Socio-economic status</td>
<td>(P&lt;.01)</td>
</tr>
<tr>
<td>Middle</td>
<td>Socio-economic status</td>
<td>Anxiety</td>
<td>(P&lt;.01)</td>
</tr>
<tr>
<td>Lowest</td>
<td>Anxiety</td>
<td>School Environment</td>
<td>(\text{NS})</td>
</tr>
</tbody>
</table>

On the strength of the above results, the hypothesis \(H_1(a)\) is rejected and concluded that Socio-Economic Status occurred as the source of greatest effect on Reading Comprehension in English, whereas the school Environment is the source of the lowest main effect. The Anxiety appeared between these two main streams.

4.3.1 (B) An Interactional Effects of Anxiety, Socio-Economic Status and School Environment on Reading Comprehension in English

HYPOTHESIS: \(H_1(b)\)

"The interactional effects of Anxiety, Socio-Economic Status and School Environment would also show the significant effect on Reading Comprehension in English."
It is evident from the table No. 4. 8 that the interaction between any two of the three independent variables have not been found significant. The interactional effects between Anxiety X Socio-Economic Status, Anxiety X School Environment, Socio-Economic Status X School Environment are F=0.04923, df=1; 952, NS; F = 0.3120 df = 1; 952, NS ; F = 0.3020, df = 1; 952, NS respectively. The combined interactional effect of Anx X SES X SE has been found significant at high level of significance (F=18.6381, df=1; 952, p<.01).

On the strength of the above results, the hypothesis IH7 (b) is partially retained. As evident from the findings for class XI it is concluded that interactional effect of any two of the three source of variations is not significant, whereas the combined interactional effect of all the three sources of variations is significantly effective.

4.4 Results at a Glance

The results of the present study as found on testing the hypotheses can be summarized as under :-

1. Anxiety & Reading Comprehension in English are negatively correlated in boys (df=545, r = - 0.0654, NS), girls (df = 411, r = - 0.0246, NS) and in boys & girls together (df = 958, r = - 0.0394, NS) though the correlations are not significant.

2. The correlation between Socio-Economic Status & Reading Comprehension in English in boys & girls as well as boys & girls separately are found to be positively significant (r = 0.3305 df=958, p<.01; r = 0.2652 df = 545, p<0.01; r = 0.3720 df = 411, p<0.01 respectively).

3. Boys & girls separately and boys & girls together have positive correlation between School Environment & Reading Comprehension in English.

(a) The boys separately have a positive correlation with R.C. in English (r = 0.06013 df = 545) but the correlation is not significant.
(b) The coefficient of correlation for the girls separately show the positive & significant correlation at the moderate level of significance (\(r = 0.01148\) df = 422; \(p < 0.05\)).

(c) Boys & girls together show a positive & significant correlation at high level of significance (\(r = 0.0921\) df = 958; \(p < 0.01\)).

4. The joint effects of Anxiety & Socio-Economic Status (\(R^{2}_{1(23)} = 0.3351\)), Socio-Economic Status & School Environment (\(R^{2}_{1(34)} = 0.3411\)), Socio-Economic Status & Anxiety (\(R^{2}_{1(42)} = 0.0994\)) show their significant effect on Reading Comprehension in English. The joint effect of Anxiety, SES & SE also show significant effect on Reading Comprehension in English (\(R^{2}_{1(234)} = 0.4873\)).

5. The means of girls & boys are \(M = 26.6634\) and \(M = 24.7495\) respectively. The 't-value' of these two means is \(t = 3.4893\) df=958, \(p < 0.01\). The 't-value' indicates that the difference is significant at 0.01 level in favour of girls.

6. The mean of students of urban area is \(M = 28.7188\) and the mean of students of rural area is \(M = 22.4271\). The higher mean of urban area shows the higher Reading Comprehension in English. The 't-value' (\(t = 12.5320\), df=958; \(p < 0.01\)) indicates that the difference is significant at high level of confidence.

7(a) The main effects of the independent variables on the Reading Comprehension in English are:

(i) Relatively, SES has been found to have greatest main effect on Reading Comprehension in English (\(F = 82.3226\), df=1; 952, \(p < 0.01\)).

(ii) The main effect of Anxiety has also been found affecting Reading Comprehension in English significantly (\(F = 11.0291\), df=1; 952, \(p < 0.01\) and could be ranked second in position.

(iii) The main effect of School Environment which had been taken as the third main variance has not been estimated significant on Reading Comprehension in English (\(F = 0.2246\), df=1, 952. NS). This main effect could be ranked the lowest.

7(b) The interaction between any two of the three independent variables has not been found significant. The interactional effects between
Anxiety X Socio-Economic Status, Anxiety X School Environment, Socio-Economic Status X School Environment are \( F = 0.04923, \text{df}=1; 952, \text{NS} \); \( F = 0.3120, \text{df}=1; 952, \text{NS} \); \( F = 0.3020, \text{df}=1; 952, \text{NS} \) respectively. The combined interactional effects of Anxiety X SES X SE has been found significant at high level of significance ( \( F = 18.6381, \text{df}=1; 952, p<0.01 \)).

4.5 Interpretation and Discussion

Results obtained in the present chapter shows the significant association of the independent variables viz., Anxiety, Socio-Economic Status and School Environment with the Reading Comprehension in English of the students of class XI, taken as a dependent variable in the study. From the three independent variables, taken under the present study, the two variables SES & SE belong to the social variables whereas the Anxiety comes under the psychological variables. Thus, the independent variables cover the socio-psychological variables. The association of all these independent variables on the dependent variable noticed different variations in the findings which needs different and separate interpretations.

4.5.1 Influence of Psychological Variable on Reading Comprehension in English

Influence of Anxiety on Reading Comprehension in English

The results obtained on IH\(_7\) indicate that the Anxiety emerged as the potent source variable interacting with Reading Comprehension in English among the students of class XI. The Anxiety indicates a negative correlation with Reading Comprehension in English (CH\(_1\)) though the correlation is not significant. These facts could be discussed on the strength of the association of the socio-psychological activities with the members and resources of the schools. Various studies indicate that the students who are highly motivated, having positive attitude towards reading, and more literary interest were found to be less anxious and
thereby having better reading speed & comprehension. Kopper (1970); Sharma (1971); Murlidharan & Sharma (1971); Nijhawan (1972); Srivastava & Sinha (1975); Singh & Kaur (1976); Agrawal (1981); Dass (1984); Dhanger (1985); Trivedi (1995); Singh, Archra and Broota, Aruna (1995); Promod, Shanthi (1996); have indicated in their findings that the students have the higher level of Anxiety and the Anxiety correlates the Reading Comprehension negatively. Our results are also parallel to the findings of the previous studies.

4.5.2 Influence of Social Variables on Reading Comprehension in English

4.5.2.1 Influence of Socio-Economic Status on Reading Comprehension in English

One of the major non-cognitive factors, that has held educational researchers' interest, is the Socio-Economic Status of the students. Investigators who are concerned with social change as well as an agent of contributing to such a change have conducted a number of studies on the relationship between Socio-Economic Status and Reading Comprehension. Socio-Economic Status covers many social aspects of the students, which may effect language learning in general and Reading Comprehension in particular.

In the present study the hypothesis IH7 reveals that the Socio-Economic Status emerged as the most significant source of variance among all the three independent variables interacting with Reading Comprehension in English of the students of class XI. This fact could be discussed on the strength of the social and physical activities in the schools and in the society. Various studies indicate that the teachers, parents, pupil groups and learning materials have very much to do with the process of Reading Comprehension in the students. Thorndike (1973); Bhishikar (1980); Shah (1981); Agrawal, (1981); Nanda, Kamala (1982), Srinivasa (1982); Subrahmanyan (1982); Brahmbhatt (1983); Nagpal (1983); Dass
(1984); Shelat (1984); Shukla (1984); Deshpande (1985); Patel (1985); Patel & Verma (1985); Kachhia (1985); Khare (1985); Mehrotra (1986); Misra (1986); Patel (1986); Sabapathy (1986); Gupta (1987); Trivedi (1987); Vyas & Sharad (1988); Singh, Manju (1989); Dubey, Om Babu (1990); Kelu (1990); Shnkarappan (1992); Dave, Meeta (1992); Selvaraj, Gnanaguru (1992); Srivastava, Remy (1992); Garg, Chaturvedi & Seema (1992), Thejovathi (1995); Khan Intakhab Alam (1996) studied the socio-economic status on the Reading Comprehension in English of the students, they found that the students belonging to higher Socio-Economic Status group are also higher in Reading Comprehension in English. These studies confirm the findings of our present study. This indicates that the higher the social, emotional and physical facilities, the higher the reading and learning environment which lacks in low Socio-Economic Status in general.

Some studies in this field have shown rather different findings: Garabedian (1979); Basavayya (1980); Gaur (1982); Narang (1987); Sharma (1988); Vyas, Sharad (1988); Verma & Tiku Asha (1990) Rao, Sundaraja (1991); Alavander (1992) have shown that Socio-Economic Status has no bearing on Reading Comprehension in English. These findings are different from the findings of our present study. This could be discussed on the basis of samples taken according to and the place of English in the school curriculum. The above studies are based on the samples taken from the metropolitan cities of India comprising of the highest SES group and the lowest SES group. In these studies Reading Comprehension in English was estimated on the basis of different Medium of Instructions in Schools.

In the present study the samples have been taken from Bilaspur education division in which moderate level of high SES groups and mostly lower SES groups belong and all the Hindi-medium schools where English is taught as a second language have been included in the study, these may be the factors which cause difference in findings of our present study with the above study.
4.5.2.2 Influence of School Environment on Reading Comprehension in English

Human beings are always immersed in a social environment which not only changes the very structure of the individual or just compels him to recognize facts, but also provides him with a readymade system of signs. The school is the most important experience in the process of child development. When the child enters the school arena, he or she is presented with new opportunities in terms of socialization and cognitive development. These opportunities are provided in different measures in different schools and may have a direct impact on the cognitive and affective behaviours of students.

School Environment influences Reading Comprehension in English in different ways. The result obtained on IH₂(a) indicated that the effect of School Environment has been taken as the third main variance and has not been estimated significant on Reading Comprehension in English. This main effect is ranked the lowest.

School Environment indicates the positive correlation with Reading comprehension in English (CH₃) in boys and the correlation is not significant whereas the coefficient of correlation in girls separately and boys & girls together show positive and significant correlation at the moderate and high level respectively. Various studies indicate that the accommodation available in the school, teachers' qualifications, instructional facilities, evaluation procedures, time spent on reading abilities, library facilities, favourable environment, effective supervision & administrative control, good financial conditions positively influence Reading Comprehension in English. Brain, Thompson (1975); Robert (1976); Richardson (1977); Brown and Select (1977); Kean, Michael & other (1979); Tizard, Schofield and Hewison (1982); Nanda, Kamal (1982); Joshi(1984); Sarasamma(1984); Deshpande (1985); Sabapathy (1986); Shah (1988); Sharma (1988); Grover, Santosh (1991); Rao; Soundaraja
(1991); Chelini (1991); Pradhan (1991); Salehi, Morteza (1991); Alavandar (1992); Khader (1992); Panda, Bhujendra Nath et al (1995); Vimala Devi (1998) have indicated in their findings that there is a positive relationship between School Environment and Reading Comprehension. The finding of the present study confirms the finding of the above studies.

4.5.3 Influence of Sex on Reading Comprehension in English

The present study aimed at determining difference between the boys and girls with regard to Reading Comprehension in English. It has been found that there existed a significant difference in Reading Comprehension in English in favour of girls. It may therefore be stated that sex has influence on RC in English. This finding of the present study is supported by the studies of Agrawal (1981), Dass (1984), Sarasamma (1984), Misra (1986), Singh, Virendra; (1988), Koteswara, Narayana (1991); who found significant sex difference in favour of girls. However, the findings of the present study is contradictory to the findings of Roy (1983), Skanthakumari (1987), Reddy, Govinda (1988), Birkad (1989), Khan Yusuf (1989), Misra, Lokmanya (1992) who found that the boys are significantly better than the girls in RC in English. The results of the present study is also not in agreement to the findings of Shah (1979), Srinivasa Rao & Subramanayan (1981), Subrahmanyan (1982), Gaur (1982), Shivapuri (1982), Brahmbhatt (1983), Shukla (1984), Patel & Vora (1985), Patel (1986), Mohanty (1989), Bag, Anjali (1990), Bhattacharya, Sulekha (1990), Dey, Sarswati (1991), Srinivasa, Remy (1992) who found no difference between the boys & girls with regard to Reading Comprehension. Since the findings give extreme conditions and are contradictory, further investigation in this regard is needed to support the evidences.
4.5.4 Influence of Locale on Reading Comprehension in English

The purpose of the study was to find out whether urban and rural learner differ significantly with regard to their ability of Reading Comprehension in English. It has been found that rural and urban learners differ significantly in Reading Comprehension in English. The finding of this study has shown that the Reading Comprehension in English of the learner of standard XI is significantly influenced by the locale. The rural and urban groups differed significantly on their English Comprehension skills in favour of the urban group. Various studies indicate that the education of parents, education of the siblings, reading habits of family members, exposure to media like print media, electronic media etc., facilities available in schools, local environment, educated neighbours, mates belonging to educated family positively influence Reading Comprehension. This finding of the present study is in agreement with the findings of Srinivasa Rao & Subrahmanyan (1981), Subrahmanyan (1982), Vora (1982), Misra (1983), Roy (1983), Patil (1985), Dhanger (1985), Rao, Srinivasa (1986), Skanthakumari (1987), Tripathi (1987), Singh, Virendra (1988), Singh, Manju (1989), Bag, Anjali (1990), Bhattacharya, Sulekha (1990) Rariya (1990), Koteswara, Narayana (1991), Dey Sarswati (1991), Rao, Soundaraja (1991), Alavandar (1992), Sankarappan (1992), Garg, Chaturvedi, Seema (1992) who found that urban pupils differ significantly with rural pupils in Reading Comprehension. The finding of the present study is not with the agreement of the findings of Shukla (1984), Sarasamma (1984), Sharma (1985), Vyas, Sharad (1987) who found rural and urban learners did not differ significantly in Reading Comprehension.

The findings of the present study leads to the conclusion that the students of urban area performs better in Reading Comprehension in English due to the better facilities available to them.

A resume of the present study has been presented in the next chapter.