CHAPTER-IV 
DATA ANALYSIS AND DISCUSSION

4.1 Introduction

4.2 Tabulation of Data

4.3 Analysis of Data

4.4 Testing of Hypotheses
4.1 INTRODUCTION

Study of English Proficiency among secondary school students in relation to their Self-Esteem and Family Environment has much more importance in Qualitative and improvement in quality of educational process and have the quality product coming out of it. The hypothesis framed in first chapter and data collected in third chapter will be analyzed here and hence the conclusions will be drawn. So that those may be utilized in educational process to improve it.

After collecting the data, the next step is the analysis and interpretation of data, whereas it is essential that data should be collected systematically, its presentation is equally important. Data should be studied from many angles as possible as to find out nature. The content analysis is the process under which data is categorized or classified. It helps in testing researcher’s hypotheses.

The analysis and interpretation of data is an important, planned and task oriented step in the research work. After scoring and tabulation, process of the statistical calculations are made according to research design of the study. In analysis and interpretation process, the performance of total on selected and tested variables is discussed. By this process the hypothesis are tested which in turn forms the findings and calculations.
4.2 TABULATION OF DATA

Tabulating denotes the recording of the classified material in accurate mathematical terms. The total scores and dimension wise scores were tabulated and subjected to statistical analysis to test different hypotheses, `t' test was applied and two level of significance, that is 0.05 and 0.01 levels were taken as standard for drawing inference of statistical values as the results in each section.

4.3 ANALYSIS OF DATA

In this chapter the data collected on all three tools previously will be analysed statistically and the hypotheses and results will be verified.

With an objective of comparing different groups, mean, standard deviation and co-relation.

4.4 TESTING OF HYPOTHESES

Calculations of Mean and S.D.

These calculations of Mean and Standard Deviation have been shown in the following tables:
Hypothesis 1:

There is no significant difference in the English Proficiency among Secondary School Students of M.P. Board and CBSE Board.

Table 4.1

<table>
<thead>
<tr>
<th>Students</th>
<th>Mean (M)</th>
<th>SD (σ)</th>
<th>Degree of Freedom (df)</th>
<th>Significance</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.P. Board Students (Boys+Girls)</td>
<td>24.70</td>
<td>11.22</td>
<td>598</td>
<td>0.05</td>
<td>1.96</td>
</tr>
<tr>
<td>C.B.S.E. Students (Boys+Girls)</td>
<td>44.47</td>
<td>6.33</td>
<td></td>
<td>0.01</td>
<td>2.59</td>
</tr>
</tbody>
</table>

\[
t = \frac{M_1 - M_2}{S_{Ed}}
\]

\[
S_{Ed} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}
\]

\[
= \frac{24.70 - 44.47}{0.74} = 26.58
\]

\[
= \sqrt{\frac{11.22^2}{300} + \frac{6.33^2}{300}} = 0.74
\]

df= (300-1)+(300-1) = 598

For 598 df the standard value of t at 0.01 level of significance is 2.59 and at 0.05 level of significance it is 1.96. The calculated Value of t is 26.58 which is more than these two standard values, and hence significant. Hence, there is significant difference in the English Proficiency among secondary school students of M.P. Board and CBSE Board. Hypothesis is rejected.
Graph showing English Proficiency among Secondary School Students of M.P. Board and CBSE Board

Figure - 2
Hypothesis 2:

There is no significant difference in the Self-Esteem of Secondary School Students of M.P. Board and CBSE Board

Table 4.2
Self-Esteem of Secondary School Students of M.P. Board and CBSE Board

<table>
<thead>
<tr>
<th>Students</th>
<th>Mean (M)</th>
<th>SD (σ)</th>
<th>Degree of Freedom (df)</th>
<th>Significance</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.P. Board Students (Boys+Girls)</td>
<td>122.58</td>
<td>55.65</td>
<td>598</td>
<td>0.05</td>
<td>1.96</td>
</tr>
<tr>
<td>C.B.S.E. Students (Boys+Girls)</td>
<td>126.68</td>
<td>58.01</td>
<td></td>
<td>0.01</td>
<td>2.59</td>
</tr>
</tbody>
</table>

\[
t = \frac{M_1 - M_2}{S_{Ed}}
\]

\[
S_{Ed} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}
\]

\[
= \frac{122.58 - 126.68}{4.64} = \frac{55.65^2}{300} + \frac{58.01^2}{300}
\]

\[
= 0.88 = 4.64
\]

df= (300-1)+(300-1) = 598

For 598 df the standard value of \( t \) at 0.01 level of significance is 2.59 and at 0.05 level of significance it is 1.96. The calculated Value of \( t \) is 0.88 which is less than these two standard values, and hence insignificant. Hence, there is no significant difference in the Self-Esteem of secondary school students of M.P. Board and CBSE Board. Hypothesis is accepted.
Graph showing Self-Esteem of Secondary School Students of

M.P. Board and CBSE Board

Figure - 3
Hypothesis 3:

There is no significant difference in the Family Environment among Secondary School Students of M.P. Board and CBSE Board

<table>
<thead>
<tr>
<th>Students</th>
<th>Mean (M)</th>
<th>SD (σ)</th>
<th>Degree of Freedom (df)</th>
<th>Significance</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.P. Board Students (Boys+Girls)</td>
<td>633.87</td>
<td>112.73</td>
<td>598</td>
<td>0.05</td>
<td>1.96</td>
</tr>
<tr>
<td>C.B.S.E. Students (Boys+Girls)</td>
<td>664.34</td>
<td>133.88</td>
<td></td>
<td>0.01</td>
<td>2.59</td>
</tr>
</tbody>
</table>

\[
t = \frac{M_1 - M_2}{S_{Ed}}
\]

\[
S_{Ed} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}
\]

\[
t = \frac{633.87 - 664.34}{10.10}
\]

\[
= 3.02
\]

\[
df = (300-1)+(300-1) = 598
\]

For 598 df the standard value of t at 0.01 level of significance is 2.59 and at 0.05 level of significance it is 1.96. The calculated value of t is 3.02 which is more than these two standard values, and hence significant. Hence, there is significant difference in the Family Environment among secondary school students of M.P. Board and CBSE Board. Hypothesis is rejected.
Graph showing Family Environment among Secondary School Students of M.P. Board and CBSE Board

Figure - 4
Hypothesis 4:

There is no significant difference in the Relationship of English Proficiency and Self-Esteem among Secondary School Students of M.P. Board and CBSE Board

Table 4.4
Relationship of English Proficiency and Self-Esteem among Secondary School Students of M.P. Board and CBSE Board

<table>
<thead>
<tr>
<th>Students</th>
<th>Mean (M)</th>
<th>SD (σ)</th>
<th>Degree of Freedom (df)</th>
<th>Significance</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Proficiency M.P. Board and C.B.S.E. Students (Boys+Girls)</td>
<td>34.59</td>
<td>13.44</td>
<td>1198</td>
<td>0.05</td>
<td>1.96</td>
</tr>
<tr>
<td>Self-Esteem M.P. Board and C.B.S.E. Students (Boys+Girls)</td>
<td>124.63</td>
<td>56.83</td>
<td></td>
<td>0.01</td>
<td>2.58</td>
</tr>
</tbody>
</table>
\[ t = \frac{M_1 - M_2}{S_{Ed}} \]

\[ S_{Ed} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} \]

\[ = \frac{34.59 - 124.63}{2.38} \]

\[ = 37.77 \]

\[ = 2.38 \]

\[ \text{df} = (600-1)+(600-1) = 1198 \]

For 1198 df the standard value of \( t \) at 0.01 level of significance is 2.58 and at 0.05 level of significance it is 1.96. The calculated Value of \( t \) is 37.77 which is more than these two standard values, and hence significant. Hence, there is significant difference in the relationship of English Proficiency and Self-Esteem among secondary school students of M.P. Board and CBSE Board. Hypothesis is rejected.
Graph showing Relationship of English Proficiency and self-Esteem among Secondary School Students of M.P. Board and CBSE Board

Figure - 5
Hypothesis 5:

There is no significant difference in the Relationship of English Proficiency and Family Environment among Secondary School Students of M.P. Board and CBSE Board

Table 4.5

Relationship of English Proficiency and Family Environment among Secondary School Students of M.P. Board and CBSE Board

<table>
<thead>
<tr>
<th>Students</th>
<th>Mean (M)</th>
<th>SD (σ)</th>
<th>Degree of Freedom (df)</th>
<th>Significance</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Proficiency M.P. Board and C.B.S.E. Students (Boys+Girls)</td>
<td>34.59</td>
<td>13.44</td>
<td>1198</td>
<td>0.05</td>
<td>1.96</td>
</tr>
<tr>
<td>Family Environment M.P. Board and C.B.S.E. Students (Boys+Girls)</td>
<td>649.11</td>
<td>124.59</td>
<td></td>
<td>0.01</td>
<td>2.58</td>
</tr>
</tbody>
</table>
\[ t = \frac{M_1 - M_2}{S_{Ed}} \]

\[ S_{Ed} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} \]

\[ = \frac{34.59 - 649.11}{5.12} \]

\[ = \frac{13.44^2 + 124.59^2}{600 + 600} \]

\[ = 120.12 \]

\[ = 5.12 \]

\[ \text{df} = (600-1)+(600-1) = 1198 \]

For 1198 df the standard value of t at 0.01 level of significance is 2.58 and at 0.05 level of significance it is 1.96. The calculated Value of t is 120.12 which is more than these two standard values, and hence significant. Hence, there is significant difference in the relationship of English Proficiency and Family Environment among secondary school students of M.P. Board and CBSE Board. Hypothesis is rejected.
Graph showing relationship of English Proficiency and Family Environment among Secondary School Students of M.P. Board and CBSE Board

Figure – 6

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