5.1 Introduction:

In the present chapter based on the analysis of the data and interpretation of the results, findings some conclusions are drawn. On the basis of these findings and conclusions and their discussion some necessary implications and suggestions are given. Similarly, on the basis of the said conclusions further research in the field related to this study are suggested. Before giving findings it is necessary to know the hypotheses and objectives of the present study.

5.2 Statement of problem:

A study of effect of cooperative learning strategy on adjustment and attitudes of B.Ed. college trainees of Pune University (Savitribai Phule Pune University).

5.3 Objectives of Research:

Following are the objectives of the present research:

1. To prepare a cooperative learning strategy.
2. To study the effects of cooperative learning strategy on attitudes of B.Ed. college trainees.
3. To study the effects of cooperative learning on adjustment of B.Ed. college trainees.
4. To compare the attitude scores of boys and girls B.Ed. college trainees obtained by using cooperative learning strategy.

5. To compare the attitude scores of rural and urban B.Ed. college trainees obtained by using cooperative learning strategy.

6. To compare the attitude scores of Arts, Commerce and Science B.Ed. college trainees obtained by using cooperative learning strategy.

7. To compare the adjustment scores of boys and girls B.Ed. college trainees obtained by using cooperative learning strategy.

8. To compare the adjustment scores of rural and urban B.Ed. college trainees obtained by using cooperative learning strategy.

9. To compare the adjustment scores of Arts, Commerce and Science B.Ed. college trainees obtained by using cooperative learning strategy.

10. To compare the post test attitude scores of boys B.Ed. college trainees of control and experimental group.

11. To compare the post test attitude scores of girls B.Ed. college trainees of control and experimental group.

12. To compare the post test attitude scores of rural B.Ed. college trainees of control and experimental group.

13. To compare the post test attitude scores of urban B.Ed. college trainees of control and experimental group.
14. To compare the post test attitude scores of Arts B.Ed. college trainees of control and experimental group.

15. To compare the post test attitude scores of Commerce B.Ed. college trainees of control and experimental group.

16. To compare the post test attitude scores of Science B.Ed. college trainees of control and experimental group.

17. To compare the post test adjustment scores of boys B.Ed. college trainees of control and experimental group.

18. To compare the post test adjustment scores of girls B.Ed. college trainees of control and experimental group.

19. To compare the post test adjustment scores of rural B.Ed. college trainees of control and experimental group.

20. To compare the post test adjustment scores of urban B.Ed. college trainees of control and experimental group.

21. To compare the post test adjustment scores of Arts B.Ed. college trainees of control and experimental group.

22. To compare the post test adjustment scores of Commerce B.Ed. college trainees of control and experimental group.

23. To compare the post test adjustment scores of Science B.Ed. college trainees of control and experimental group.
5.4 Hypotheses of Research:

Following are the hypothesis of the present research.

Research hypothesis:

1. There will be significant difference between the mean scores of attitudes of B.Ed. college trainees obtained through traditional and cooperative learning strategy.
2. There will be significant difference between the mean scores of adjustments of B.Ed. college trainees obtained through traditional and cooperative learning strategy.

Null hypothesis:

3. There will be no genderwise significant difference between the mean scores of attitudes of B.Ed. college trainees formed by cooperative learning strategy.
4. There will be no geographical or regionwise (rural and urban) significant difference between the mean scores of attitudes of B.Ed. college trainees formed by cooperative learning strategy.
5. There will be no facultywise (Arts, Commerce and Science) significant difference between the mean scores of attitudes of B.Ed. college trainees formed by cooperative learning strategy.
6. There will be no genderwise significant difference between the mean scores of adjustment of B.Ed. college trainees caused by cooperative learning strategy.
7. There will be no geographical or regionwise (rural and urban) significant difference between the mean scores of adjustment of B.Ed. college trainees caused by cooperative learning strategy.
8. There will be no facultywise (Arts, Commerce and Science) significant difference between the mean scores of adjustment of B.Ed. college trainees caused by cooperative learning strategy.

9. There will be no significant difference between the post test mean scores of attitudes of boys B.Ed. college trainees of control and experimental group.

10. There will be no significant difference between the post test mean scores of attitudes of girls B.Ed. college trainees of control and experimental group.

11. There will be no significant difference between the post test mean scores of attitudes of rural B.Ed. college trainees of control and experimental group.

12. There will be no significant difference between the post test mean scores of attitudes of urban B.Ed. college trainees of control and experimental group.

13. There will be no significant difference between the post test mean scores of attitudes of Arts B.Ed. college trainees of control and experimental group.

14. There will be no significant difference between the post test mean scores of attitudes of Commerce B.Ed. college trainees of control and experimental group.

15. There will be no significant difference between the post test mean scores of attitudes of Science B.Ed. college trainees of control and experimental group.

16. There will be no significant difference between the post test mean scores of adjustment of boys B.Ed. college trainees of control and experimental group.
17. There will be no significant difference between the post test mean scores of adjustment of girls B.Ed. college trainees of control and experimental group.

18. There will be no significant difference between the post test mean scores of adjustment of rural B.Ed. college trainees of control and experimental group.

19. There will be no significant difference between the post test mean scores of adjustment of urban B.Ed. college trainees of control and experimental group.

20. There will be no significant difference between the post test mean scores of adjustment of Arts B.Ed. college trainees of control and experimental group.

21. There will be no significant difference between the post test mean scores of adjustments of Commerce B.Ed. college trainees of control and experimental group.

22. There will be no significant difference between the post test mean scores of adjustments of Science B.Ed. college trainees of control and experimental group.

5.5 Testing of Hypothesis:

Table 5.1 is showing the analysis of hypothesis.
<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>Hypothesis</th>
<th>Statistical technique</th>
<th>Obtained value</th>
<th>Table value</th>
<th>Df</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>H₁</td>
<td>t-test</td>
<td>13.23</td>
<td>2.63</td>
<td>98</td>
<td>Significant</td>
</tr>
<tr>
<td>2.</td>
<td>H₁</td>
<td>t-test</td>
<td>3.29</td>
<td>2.63</td>
<td>98</td>
<td>Significant</td>
</tr>
<tr>
<td>3.</td>
<td>H₀</td>
<td>t-test</td>
<td>2.30</td>
<td>2.01</td>
<td>48</td>
<td>Significant</td>
</tr>
<tr>
<td>4.</td>
<td>H₀</td>
<td>t-test</td>
<td>1.27</td>
<td>2.01</td>
<td>48</td>
<td>Not significant</td>
</tr>
<tr>
<td>5.</td>
<td>H₀</td>
<td>F-test</td>
<td>0.398</td>
<td>3.23</td>
<td>2 &amp; 47</td>
<td>Not significant</td>
</tr>
<tr>
<td>6.</td>
<td>H₀</td>
<td>Std t-test</td>
<td>4.29</td>
<td>7.21</td>
<td>48</td>
<td>Not significant</td>
</tr>
<tr>
<td>7.</td>
<td>H₀</td>
<td>Std t-test</td>
<td>2.03</td>
<td>6.36</td>
<td>48</td>
<td>Not significant</td>
</tr>
<tr>
<td>8.</td>
<td>H₀</td>
<td>F-test</td>
<td>3.22</td>
<td>3.23</td>
<td>2 &amp; 47</td>
<td>Not significant</td>
</tr>
<tr>
<td>9.</td>
<td>H₀</td>
<td>Std t-test</td>
<td>1.89</td>
<td>9.98</td>
<td>43</td>
<td>Not significant</td>
</tr>
<tr>
<td>10.</td>
<td>H₀</td>
<td>Std t-test</td>
<td>4.47</td>
<td>6.54</td>
<td>53</td>
<td>Not significant</td>
</tr>
<tr>
<td>11.</td>
<td>H₀</td>
<td>t-test</td>
<td>5.29</td>
<td>2.704</td>
<td>39</td>
<td>Significant</td>
</tr>
<tr>
<td>12.</td>
<td>H₀</td>
<td>t-test</td>
<td>5.36</td>
<td>2.66</td>
<td>57</td>
<td>Significant</td>
</tr>
<tr>
<td>13.</td>
<td>H₀</td>
<td>t-test</td>
<td>1.99</td>
<td>2.00</td>
<td>57</td>
<td>Not significant</td>
</tr>
<tr>
<td>14.</td>
<td>H₀</td>
<td>t-test</td>
<td>2.13</td>
<td>2.57</td>
<td>5</td>
<td>Not significant</td>
</tr>
<tr>
<td>15.</td>
<td>H₀</td>
<td>t-test</td>
<td>5.91</td>
<td>2.704</td>
<td>35</td>
<td>Significant</td>
</tr>
<tr>
<td>16.</td>
<td>H₀</td>
<td>t-test</td>
<td>0.591</td>
<td>2.01</td>
<td>43</td>
<td>Not significant</td>
</tr>
<tr>
<td>17.</td>
<td>H₀</td>
<td>t-test</td>
<td>6.17</td>
<td>2.70</td>
<td>43</td>
<td>Significant</td>
</tr>
<tr>
<td>18.</td>
<td>H₀</td>
<td>t-test</td>
<td>2.93</td>
<td>2.75</td>
<td>39</td>
<td>Significant</td>
</tr>
<tr>
<td>19.</td>
<td>H₀</td>
<td>t-test</td>
<td>1.29</td>
<td>2.704</td>
<td>57</td>
<td>Not significant</td>
</tr>
<tr>
<td>20.</td>
<td>H₀</td>
<td>t-test</td>
<td>0.12</td>
<td>2.704</td>
<td>57</td>
<td>Not significant</td>
</tr>
<tr>
<td>21.</td>
<td>H₀</td>
<td>t-test</td>
<td>2.93</td>
<td>2.51</td>
<td>5</td>
<td>Significant</td>
</tr>
<tr>
<td>22.</td>
<td>H₀</td>
<td>t-test</td>
<td>4.14</td>
<td>2.704</td>
<td>35</td>
<td>Significant</td>
</tr>
</tbody>
</table>
At the end of the experiment it was found that:

- Attitudes of trainees of experimental group increased due to cooperative learning strategy than traditional methods of instructions to control group trainees.
- Adjustment of experimental group trainees enhanced due to cooperative learning strategy than traditional methods of instructions to control group trainees.
- Attitudes of girl trainees towards the subject Instructional Design was found significantly more than the attitudes of boy trainees of experimental group.
- There was no significant effect of cooperative learning strategy on attitudes of rural and urban, Arts, Commerce and Science trainees of experimental group.
- There was no significant effect of cooperative learning strategy on adjustment of boys and girls, rural and urban, Arts, Commerce and Science trainees of experimental group.
- The scores of attitudes of boy and girl trainees of control and experimental group were not significantly differ when exposed to traditional and cooperative learning strategy.
- Rural and urban trainees of experimental group trainees showed enhanced attitude due to cooperative learning strategy than trainees of control group.
- Arts and Commerce trainees of control and experimental group do not show significant difference in attitudes when exposed to traditional and cooperative learning strategy.
• Science trainees of experimental group when exposed to cooperative learning strategy showed enhanced attitudes as compared to Science trainees of control group when taught through traditional methods of teaching.

• Boy trainees, urban trainees and Arts trainees of control and experimental group do not show significant difference in adjustment when exposed to traditional and cooperative learning strategy.

• Girl trainees, rural trainees, Commerce and Science trainees of experimental group when exposed to cooperative learning strategy showed increase in adjustment as compared to control group when taught through traditional methods of teaching.

5.6 Findings of the Research:

The findings of the present research are listed below.

1. There was significant difference at 0.01 level between the mean scores of attitudes of B.Ed. college trainees of control and experimental group. The mean attitude score of experimental group is \( M=123.2 \) with standard deviation 5.6 and control group with \( M=110.9 \) with standard deviation 3.55. The calculated \( t \)-value 13.23 at 0.01 level was greater than the table value i.e. 2.63 for df 98. Thus the experimental group trainees possess more positive attitude than control group trainees. Hence the research hypothesis is accepted.

2. There was significant difference at 0.01 level between the mean scores of adjustment of B.Ed. college trainees of control and experimental group. The mean adjustment score of experimental group is \( M=117.3 \) with standard deviation 8.35 and control group with \( M=112.7 \) with standard deviation 5.4. The calculated \( t \)-value 3.29 at 0.01 level is
greater than the table value i.e. 2.63 for df 98. Thus the experimental group trainees are more adjusted than control group trainees. Hence the research hypothesis is accepted.

3. There was genderwise significant difference at 0.05 level between the post test mean scores of attitudes of B.Ed. trainees of experimental group. The mean attitude score of girl trainees is M= 121.25 with standard deviation 7.2 and boy trainees with M= 115.9 with standard deviation 9.45. The calculated t-value 2.30 is greater than table value i.e. 2.01 for df 48 at 0.05 level. Thus the girl trainees showed more positive attitude than boy trainees of experimental group. Hence the null hypothesis is rejected at 0.05 level of significance.

4. There was no regionwise significant difference between the post test mean scores of attitudes of B.Ed. trainees of experimental group. The mean attitude score of urban trainees is M= 121.1 with standard deviation 9.2 and rural trainees with M= 118.3 with standard deviation 6.64. The calculated t-value 1.27 is smaller than table value i.e. 2.01 for df 48. Hence the null hypothesis is accepted.

5. There was no facultywise significant difference between the post test mean scores of attitudes of B.Ed. trainees of experimental group. The calculated F-ratio 0.398 is smaller than table value i.e. 3.23 for df 2 and 47. Hence the null hypothesis is accepted.

6. There was no genderwise significant difference between the post test mean scores of adjustment of B.Ed. trainees of experimental group. The mean adjustment score of girl trainees is M= 139.2 with standard deviation 22 and boy trainees with M= 122.5 with standard deviation 8.2. The calculated t-value 4.29 is smaller than calculated t at 5% value i.e. 7.21. Hence the null hypothesis is accepted.
7. There was no regionwise significant difference between the post test mean scores of adjustment of B.Ed. trainees of experimental group. The mean adjustment score of urban trainees is $M= 126.2$ with standard deviation 20.2 and rural trainees with $M= 117.8$ with standard deviation 7.8. The calculated t-value 2.03 is smaller than calculated t at 5% value i.e. 6.36. Hence the null hypothesis is accepted.

8. There was no facultywise significant difference between the post test mean scores of adjustment of B.Ed. trainees of experimental group. The calculated F-ratio 3.22 is smaller than table value i.e. 3.23 for df 2 and 47. Hence the null hypothesis is accepted.

9. There was no significant difference between the post test mean scores of attitudes of boy B.Ed. trainees of experimental group and control group. The mean attitude score of boy trainees of experimental group is $M= 127.4$ with standard deviation 27.1 and control group trainees with $M= 115.9$ with standard deviation 9.5. The calculated t-value 1.89 is smaller than calculated t at 5% value i.e. 9.98. Hence the null hypothesis was accepted.

10. There was no significant difference between the post test mean scores of attitudes of girl B.Ed. trainees of experimental group and control group. The mean attitude score of girl trainees of experimental group is $M= 121.5$ with standard deviation 7.2 and control group trainees with $M= 103.5$ with standard deviation 20. The calculated t-value 4.47 is smaller than calculated t at 5% value i.e. 6.54. Hence the null hypothesis is accepted.

11. There was significant difference at 0.01 level between the post test mean scores of attitudes of rural B.Ed. trainees of experimental group
and control group. The mean attitude score of rural trainees of experimental group is $M= 118.3$ with standard deviation 6.64 and rural trainees of control group with $M= 110$ with standard deviation 2.1. The calculated t-value 5.29 is greater than table value i.e. 2.704 for df 39 at 0.01 level. Thus the rural trainees of experimental group showed more positive attitude than rural trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

12. There was significant difference at 0.01 level between the post test mean scores of attitudes of urban B.Ed. trainees of experimental group and control group. The mean attitude score of urban trainees of experimental group is $M= 121.1$ with standard deviation 9.2 and urban trainees of control group with $M= 110$ with standard deviation 6.4. The calculated t-value 5.36 is greater than table value i.e. 2.66 for df 57 at 0.01 level. Thus the urban trainees of experimental group showed more positive attitude than urban trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

13. There was no significant difference between the post test mean scores of attitudes of Arts B.Ed. trainees of experimental group and control group. The mean attitude score of Arts trainees of experimental group is $M= 123.8$ with standard deviation 4.8 and control group trainees with $M= 127.6$ with standard deviation 8.9. The calculated t-value 1.99 is smaller than table value i.e. 2.00 for df 54. Hence the null hypothesis is accepted.

14. There was no significant difference between the post test mean scores of attitudes of Commerce B.Ed. trainees of experimental group and control group. The mean attitude score of Commerce trainees of experimental group is $M= 123.3$ with standard deviation 6.45 and
control group trainees with M= 111.8 with standard deviation 7.85. The calculated t-value 2.13 is smaller than table value i.e. 2.57 for df 5. Hence the null hypothesis is accepted.

15. There was significant difference at 0.01 level between the post tests mean scores of attitudes of Science B.Ed. trainees of experimental group and control group. The mean attitude score of Science trainees of experimental group is M= 127 with standard deviation 8.05 and Science trainees of control group with M= 114.4 with standard deviation 4.65. The calculated t-value 5.91 is greater than table value i.e. 2.704 for df 35 at 0.01 level. Thus the Science trainees of experimental group showed more positive attitude than Science trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

16. There was no significant difference between the post test mean scores of adjustment of boy B.Ed. trainees of experimental group and control group. The mean adjustment score of boy trainees of experimental group is M= 122.5 with standard deviation 8.2 and control group trainees with M= 121.1 with standard deviation 7.7. The calculated t-value 0.591 is smaller than table value i.e. 2.01 for df 43. Hence the null hypothesis is accepted.

17. There was significant difference at 0.01 level between the post test mean scores of adjustment of girl B.Ed. trainees of experimental group and control group. The mean adjustment score of girl trainees of experimental group is M= 139.2 with standard deviation 22 and girl trainees of control group with M= 102.6 with standard deviation 22.1. The calculated t-value 6.17 is greater than table value i.e. 2.70 for df 53 at 0.01 level. Thus the girl trainees of experimental group were
more adjusted than girl trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

18. There was significant difference at 0.01 level between the post test mean scores of adjustment of rural B.Ed. trainees of experimental group and control group. The mean adjustment score of rural trainees of experimental group is $M= 117.9$ with standard deviation 7.8 and rural trainees of control group with $M= 109.8$ with standard deviation 9.75. The calculated $t$-value 2.93 is greater than table value i.e. 2.75 for df 39 at 0.01 level. Thus the rural trainees of experimental group were more adjusted than rural trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

19. There was no significant difference between the post test mean scores of adjustment of urban B.Ed. trainees of experimental group and control group. The mean adjustment score of urban trainees of experimental group is $M= 126.2$ with standard deviation 20.2 and control group trainees with $M= 120.2$ with standard deviation 15.3. The calculated $t$-value 1.29 is smaller than table value i.e. 2.704 for df 57. Hence the null hypothesis is accepted.

20. There was no significant difference between the post test mean scores of adjustment of Arts B.Ed. trainees of experimental group and control group. The mean adjustment score of Arts trainees of experimental group is $M= 115.7$ with standard deviation 4.45 and control group trainees with $M= 113.8$ with standard deviation 1.42. The calculated $t$-value 0.12 is smaller than table value i.e. 2.704 for df 54. Hence the null hypothesis is accepted.

21. There was significant difference at 0.05 level between the post test mean scores of adjustment of Commerce B.Ed. trainees of
experimental group and control group. The mean adjustment score of Commerce trainees of experimental group is $M= 118.7$ with standard deviation $2.62$ and Commerce trainees of control group with $M= 110.5$ with standard deviation $4.72$. The calculated $t$-value $2.93$ is greater than table value i.e. $2.51$ for df $5$ at $0.05$ level. Thus the Commerce trainees of experimental group were more adjusted than Commerce trainees of control group. Hence the null hypothesis is rejected at $0.05$ level of significance.

22. There was significant difference at $0.01$ level between the post tests mean scores of adjustment of Science B.Ed. trainees of experimental group and control group. The mean adjustment score of Science trainees of experimental group is $M= 118.5$ with standard deviation $8.7$ and Science trainees of control group with $M= 110.6$ with standard deviation $10.4$. The calculated $t$-value $4.14$ is greater than table value i.e. $2.704$ for df $35$ at $0.01$ level. Thus the Science trainees of experimental group were more adjusted than Science trainees of control group. Hence the null hypothesis is rejected at $0.01$ level of significance.

5.7 Conclusions of the Research:

Conclusions of the present research are as follows –

1. There was significant difference at $0.01$ level between the mean scores of attitudes of B.Ed. college trainees of control and experimental group. The mean attitude score of experimental group was $M=123.2$ with standard deviation $5.6$ and control group with $M= 110.9$ with standard deviation $3.55$. The calculated $t$-value $13.23$ at $0.01$ level is greater than the table value i.e. $2.63$ for df $98$. Thus it is concluded that the experimental group trainees had
more positive attitude than control group trainees. Hence the research hypothesis was accepted.

When the experimental group was exposed to cooperative learning strategy it enhanced the attitudes of trainees as compared to the control group which was taught through traditional methods of instruction. This was because trainees seem to prefer learning the subject by sharing knowledge, increase higher order thinking skills and self esteem of the trainees. They feel they understand the content effectively from their peers and release the burden of subject and enjoyed learning with cooperative learning strategy. Increase in self confidence changes their attitude from negative to positive towards the subject. The questionnaire and interview results also gave evidence that attitudes of trainees improved due to cooperative learning strategy.

2. There was significant difference at 0.01 level between the mean scores of adjustment of B.Ed. college trainees of control and experimental group. The mean adjustment score of experimental group is M=117.3 with standard deviation 8.35 and control group with M= 112.7 with standard deviation 5.4. The calculated t-value 3.29 at 0.01 level is greater than the table value i.e. 2.63 for df 98. Thus it is concluded that the experimental group trainees were more adjusted than control group trainees. Hence the research hypothesis was accepted.

It means that cooperative learning strategy improved adjustment of trainees. While working on a common task in cooperative group’s trainees rely on each other, share their views learn to make effective communication, manage stress and conflict and learn the content in joyful environment without any burden of the subject. During interview, trainees shared their views about cooperative learning strategy and told that they learn the way
of cooperation through showing respect to each others thought while studying the common task making them tolerant.

3. There was genderwise significant difference at 0.05 level between the post test mean scores of attitudes of B.Ed. trainees of experimental group. The mean attitude score of girl trainees is M= 121.25 with standard deviation 7.2 and boy trainees with M= 115.9 with standard deviation 9.45. The calculated t-value 2.30 was greater than table value i.e. 2.01 for df 48 at 0.05 level. Thus it is concluded that the girl trainees showed more positive attitude than boy trainees of experimental group. Hence the null hypothesis is rejected at 0.05 level of significance.

Boy trainees like to work in competitive environment due to bossing nature rather than cooperative environment. Girls are being naturally social, cooperative, and interdependent and found more hard working and goal oriented as compared to boy trainees. Hence girl trainees were found more positive towards the subject than boy trainees.

4. There was no regionwise significant difference between the post test mean scores of attitudes of B.Ed. trainees of experimental group. The mean attitude score of urban trainees is M= 121.1 with standard deviation 9.2 and rural trainees with M= 118.3 with standard deviation 6.64. The calculated t-value 1.27 is smaller than table value i.e. 2.01 for df 48. Thus it is concluded that there is no significant difference between the attitudes of rural and urban trainees of experimental group. Hence the null hypothesis is accepted.

5. There was no facultywise significant difference between the post test mean scores of attitudes of B.Ed. trainees of experimental group. The calculated F-ratio 0.398 is smaller than table value i.e. 3.23 for df 2 and 47. Thus it is concluded that there is no significant difference between the
attitudes of Arts, Commerce and Science trainees of experimental group. Hence the null hypothesis is accepted.

Both the two conclusions 4 and 5 in the present research showed that there was no significant difference due to region and faculty of the trainees. The reason behind this may be that the experimental group trainee’s were oriented about how to work in the cooperative task. All the trainees follow the rules of cooperative learning and worked for group’s success without considering any discrimination of region or faculty. They worked for their and group’s success only.

6. There was no genderwise significant difference between the post test mean scores of adjustment of B.Ed. trainees of experimental group. The mean adjustment score of girl trainees is M= 139.2 with standard deviation 22 and boy trainees with M= 122.5 with standard deviation 8.2. The calculated t-value 4.29 is smaller than calculated t at 5% value i.e. 7.21. Thus it is concluded that there is no significant difference between the adjustment of boy and girl trainees of experimental group. Hence the null hypothesis is accepted.

7. There was no regionwise significant difference between the post test mean scores of adjustment of B.Ed. trainees of experimental group. The mean adjustment score of urban trainees is M= 126.2 with standard deviation 20.2 and rural trainees with M= 117.8 with standard deviation 7.8. The calculated t-value 2.03 is smaller than calculated t at 5% value i.e. 6.36. Thus it is concluded that there is no significant difference between the adjustment of rural and urban trainees of experimental group. Hence the null hypothesis is accepted.
8. There was no facultywise significant difference between the post test mean scores of adjustment of B.Ed. trainees of experimental group. The calculated F-ratio 3.22 is smaller than table value i.e. 3.23 for df 2 and 47. Thus it is concluded that there is no significant difference between the adjustment of Arts, Commerce and Science trainees of experimental group. Hence the null hypothesis is accepted.

Reason behind conclusions 6, 7 and 8 in the present research may be due to the similar environment provided by the researcher to work in the cooperative group and trainees worked in their respective groups without any discrimination. The trainees acquired various social skills, personal skills and cognitive skills for success of self as well as group and fulfil their needs in cooperative groups showing improvement in adjustment.

9. There was no significant difference between the post test mean scores of attitudes of boy B.Ed. trainees of experimental group and control group. The mean attitude score of boy trainees of experimental group is M= 127.4 with standard deviation 27.1 and control group trainees with M= 115.9 with standard deviation 9.5. The calculated t-value 1.89 is smaller than calculated t at 5% value i.e. 9.98. Thus it is concluded that there is no significant difference between the attitudes of boy trainees of experimental and control group. Hence the null hypothesis is accepted.

10. There was no significant difference between the post test mean scores of attitudes of girl B.Ed. trainees of experimental group and control group. The mean attitude score of girl trainees of experimental group is M= 121.5 with standard deviation 7.2 and control group trainees with M= 103.5 with standard deviation 20. The calculated t-value 4.47 is smaller than calculated t at 5% value i.e. 6.54. Thus it is concluded that there is no significant
difference between the attitudes of girl trainees of experimental and control group. Hence the null hypothesis is accepted.

Though the results do not showed significant difference between the post test mean scores of attitudes of boy and girl trainee’s from experimental and control group but during interview trainees of experimental group told that by sharing knowledge their self confidence increased and now they do not have fear for the subject Instructional design. Working in cooperative group release the burden and made the subject interesting.

11. There was significant difference at 0.01 level between the post test mean scores of attitudes of rural B.Ed. trainees of experimental group and control group. The mean attitude score of rural trainees of experimental group is M= 118.3 with standard deviation 6.64 and rural trainees of control group with M= 110 with standard deviation 2.1. The calculated t-value 5.29 is greater than table value i.e. 2.704 for df 39 at 0.01 level. Thus the rural trainees of experimental group showed more positive attitude than rural trainees of control group. Thus it is concluded that there is significant difference between the attitudes of rural trainees of experimental and control group. Hence the null hypothesis is rejected at 0.01 level of significance.

12. There was significant difference at 0.01 level between the post test mean scores of attitudes of urban B.Ed. trainees of experimental group and control group. The mean attitude score of urban trainees of experimental group is M= 121.1 with standard deviation 9.2 and urban trainees of control group with M= 110 with standard deviation 6.4. The calculated t-value 5.36 is greater than table value i.e. 2.66 for df 57 at 0.01 level. Thus the urban trainees of experimental group show more positive attitude than urban trainees of control group. Thus it is concluded that there is significant
difference between the attitudes of urban trainees of experimental and control group. Hence the null hypothesis is rejected at 0.01 level of significance.

The control group trainees worked in teacher centred and fearful environment. Trainees from experimental group worked in cooperative environment making them responsible, inculcated social skills, feedback and support from peers in turn enhanced higher order thinking skills and self esteem. This in turn improved attitudes of rural and urban trainees from experimental group.

13. There was no significant difference between the post test mean scores of attitudes of Arts B.Ed. trainees of experimental group and control group. The mean attitude score of Arts trainees of experimental group is M= 123.8 with standard deviation 4.8 and control group trainees with M= 127.6 with standard deviation 8.9. The calculated t-value 1.99 is smaller than table value i.e. 2.00 for df 54. Thus it is concluded that there is no significant difference between the attitudes of Arts trainees of experimental and control group. Hence the null hypothesis is accepted.

14. There was no significant difference between the post test mean scores of attitudes of Commerce B.Ed. trainees of experimental group and control group. The mean attitude score of Commerce trainees of experimental group is M= 123.3 with standard deviation 6.45 and control group trainees with M= 111.8 with standard deviation 7.85. Thus it is concluded that there is no significant difference between the attitudes of Commerce trainees of experimental and control group. The calculated t-value 2.13 is smaller than table value i.e. 2.57 for df 5. Thus it is concluded that there is no significant
difference between the attitudes of Commerce trainees of experimental and control group. Hence the null hypothesis is accepted.

Results 13 and 14 showed that trainees from both the groups do not differ in attitudes but experimental group trainees in their interview reported that positive interaction, trust towards each other and cooperation among peers made the subject easy and learn content in enjoyable environment making their attitudes positive.

15. There was significant difference at 0.01 level between the post test mean scores of attitudes of Science B.Ed. trainees of experimental group and control group. The mean attitude score of Science trainees of experimental group is M= 127 with standard deviation 8.05 and Science trainees of control group with M= 114.4 with standard deviation 4.65. The calculated t-value 5.91 is greater than table value i.e. 2.704 for df 35 at 0.01 level. Thus the Science trainees of experimental group show more positive attitude than Science trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

The Science trainees from experimental group were oriented with cooperative work which benefited them in improving attitudes while control group trainees worked individually or competitively. Researchers showed that cooperative environment is better than competitive or individual working (Slavin, Johnson & Johnson, Holubec).

16. There was no significant difference between the post test mean scores of adjustment of boy B.Ed. trainees of experimental group and control group. The mean adjustment score of boy trainees of experimental group is M= 122.5 with standard deviation 8.2 and control group trainees with M= 121.1 with standard deviation 7.7. The calculated t-value 0.591 is smaller
than table value i.e. 2.01 for df 43. Thus it is concluded that there is no significant difference between the adjustment of boy trainees of experimental and control group. Hence the null hypothesis is accepted.

17. There was significant difference at 0.01 level between the post test mean scores of adjustment of girl B.Ed. trainees of experimental group and control group. The mean adjustment score of girl trainees of experimental group is $M=139.2$ with standard deviation 22 and girl trainees of control group with $M=102.6$ with standard deviation 22.1. The calculated $t$-value 6.17 is greater than table value i.e. 2.70 for df 53 at 0.01 level. Thus it is concluded that the girl trainees of experimental group were more adjusted than girl trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

18. There was significant difference at 0.01 level between the post test mean scores of adjustment of rural B.Ed. trainees of experimental group and control group. The mean adjustment score of rural trainees of experimental group is $M=117.9$ with standard deviation 7.8 and rural trainees of control group mean $M=109.8$ with standard deviation 9.75. The calculated $t$-value 2.93 is greater than table value i.e. 2.75 for df 39 at 0.01 level. Thus it is concluded that the rural trainees of experimental group were more adjusted than rural trainees of control group. Hence the null hypothesis is rejected at 0.01 level of significance.

19. There was no significant difference between the post test mean scores of adjustment of urban B.Ed. trainees of experimental group and control group. The mean adjustment score of urban trainees of experimental group is $M=126.2$ with standard deviation 20.2 and control group trainees with $M=120.2$ with standard deviation 15.3. The calculated $t$-value 1.29 is smaller than table value i.e. 2.704 for df 57. Thus it is concluded that there
is no significant difference between the adjustment of urban trainees of experimental and control group. Hence the null hypothesis is accepted.

20. There was no significant difference between the post test mean scores of adjustment of Arts B.Ed. trainees of experimental group and control group. The mean adjustment score of Arts trainees of experimental group is M= 115.7 with standard deviation 4.45 and control group trainees with M= 113.8 with standard deviation 1.42. The calculated t-value 0.12 is smaller than table value i.e. 2.704 for df 54. Thus it is concluded that there is no significant difference between the adjustment of Arts trainees of experimental and control group. Hence the null hypothesis is accepted.

21. There was significant difference at 0.05 level between the post test mean scores of adjustment of Commerce B.Ed. trainees of experimental group and control group. The mean adjustment score of Commerce trainees of experimental group is M= 118.7 with standard deviation 2.62 and Commerce trainees of control group with M= 110.5 with standard deviation 4.72. The calculated t-value 2.93 is greater than table value i.e. 2.51 for df 5 at 0.05 level. Thus it is concluded that the Commerce trainees of experimental group were more adjusted than Commerce trainees of control group. Hence the null hypothesis is rejected at 0.05 level of significance.

22. There was significant difference at 0.01 level between the post test mean scores of adjustment of Science B.Ed. trainees of experimental group and control group. The mean adjustment score of Science trainees of experimental group is M= 118.5 with standard deviation 8.7 and Science trainees of control group with M= 110.6 with standard deviation 10.4. The calculated t-value 4.14 is greater than table value i.e. 2.704 for df 35 at 0.01 level. Thus it is concluded that the Science trainees of experimental group
were more adjusted than Science trainees of control group. Hence the null hypothesis was rejected at 0.01 level of significance.

From findings 16, 19 and 20 it was concluded that there was no significant difference between the post test mean adjustment scores of boys, urban and Arts trainees of experimental and control group. The reason behind this may be that in control group the trainees worked individually or competitively. They do not react with each other for sharing their views about the subject or feel jealous about classmates. In cooperative environment trainees’ cooperate with each other and depends upon each other for success. Though trainees from experimental group trainees worked in cooperative groups in interview they narrated that it was very hectic for waiting weaker members of group and get bored and want to work independently. The researcher also found that trainees worked with different learning styles. This differentiation affects the adjustment process and hence not showed significant difference in adjustment.

From finding 17 it was concluded that there was significant difference between the adjustments of girl trainees of both the groups. Though girls are naturally interdependent and devotionally work on any task but the girl trainees from experimental group were oriented about cooperation and they follow the principles of cooperative learning. This was not happened with trainees from control group.

Finding 18 showed that rural trainees significantly differ in adjustments of both the groups. Rural trainees from experimental group worked with urban trainees who care for peer’s learning. Urban trainees helped, motivated the rural trainees from experimental group which make
them more adjusted and confident as compared to control group trainees who worked passively either individually or competitively.

Findings 21 and 22 indicated that both Commerce and Science trainees from control and experimental group showed significant difference in their adjustment. The reason may be that when the trainees from experimental group were exposed to cooperative learning strategy irrespective of their differences (gender, region and faculty) worked towards a common goal. Trainees of experimental group interact positively, resolve disputes, acquired various social and personal skills and get benefited from each other. This improved their adjustment whereas control group trainees learn the content in teacher centred competitive environment. There was no connection or bonding among the trainees of control group.

5.8 Recommendations:

Based on the findings and conclusions of the present research following recommendations are suggested for teachers, teacher educators, school or college authorities and policy makers.

1. Cooperative learning and its various strategies should be included in the B.Ed. curriculum of all the universities.
2. Cooperative learning strategy should be used at various levels of education.
3. Teachers should be trained to use cooperative learning strategy.
4. Seminars and conferences on cooperative learning strategy should be organised.
5. School authorities should take the responsibility to inculcate cooperative learning skills in the students. Schools should provide necessary facilities for implementing cooperative lessons.

6. Cooperative learning school centres should be established in the school. Staff and administrators should meet once in a week for taking the feedback about the work done by the CL committee.

7. Cooperative learning centres should be established in the universities for enhancing cooperative learning skills in the college/university students.

8. Lesson plans in various subjects by using CL strategies should be prepared by the teaching staff at school as well as college level.

9. There is need to develop a brochure for guiding the staff that how to conduct the lessons by using CL strategies.

10. Information related to the updated researches and news about cooperative learning and its strategies should be given in the pre service and in service training.

11. CL should be daily part of daily instruction methods used in teacher training programme.

5.9 Topics for further research:

For any researcher it is very difficult to study all the aspects of a problem. Hence it is necessary to give some suggestions regarding the untouched aspects of the study. For this purpose the researcher in the light of findings and conclusions from above research following topics are suggested for further research.
1. Results of the present research showed that CL strategy enhances adjustment (personal, educational and social) of trainees. Hence other components of adjustment should be studied.

2. The same study should be conducted by using true experimental design.

3. There should be additional research on comparison of effectiveness of various cooperative learning strategies.

4. There is need to undertake researches on under what conditions effectiveness of cooperative learning strategy will increase.

5. Researches on intersection of cooperative learning strategy and curriculum should be conducted.

6. The present study should be undertaken on larger sample for extended period also.

7. It is necessary to study the possible long term effects of STAD.