CHAPTER – 6 SUMMARY, FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

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CHAPTER – 6
SUMMARY, FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

The present chapter comprises a brief summary of the procedure adopted and the conclusions and suggestions derived from the study. A preliminary analysis of the scores of the different variables was attempted and analysed to answer the research questions posed and hypotheses formulated for the study. Tests of significance and Analysis of Covariance were applied for testing the difference between the means of contrasted independent groups with respect to the dependent variables selected for the study. The quantitative analysis was further supplemented by qualitative analysis for in-depth meaning of the findings emerged out of the quantitative study.

The study in retrospect is followed by a short description of the major findings of the study. The chapter concludes with a discussion of the recommendations and suggestions that can be derived from the present study for future research in the field of mathematical education.

6.2 Summary

The summary with outline of the whole study is given below.

6.2.1 Title of the Present Study

A STUDY OF EFFECTIVENESS OF COOPERATIVE LEARNING APPROACHES ON ACHIEVEMENT IN LEARNING OF ECONOMICS

6.2.2 Objectives of the Present Study

Task objectives and research objectives of present research were as given below.
Task Objectives
1. To develop teaching learning material for the cooperative learning group.
2. To construct an achievements test in Economics.
3. To construct opinionnaire for collecting students' opinions regarding cooperative learning.
4. To get descriptive information of self experience regarding cooperative learning of the students.
5. To implement cooperative learning approach programme.

Research Objectives
1. To study the effect of cooperative approach-I (Jigsaw), approach-II (STAD) and traditional approach on learning in Economics.
2. To study the effect of certain variables (gender, intelligence level and achievement level) on achievement in Economics.
3. To study the effect of certain variables (gender, intelligence level and achievement level) on retention.

6.2.3 Variables of the Present Study

Independent Variables

(A) Teaching approach
1. Cooperative learning approach-I (Jigsaw)
2. Cooperative learning approach-II (STAD)
3. Traditional learning approach

(B) Intelligence
1. High
2. Medium
3. Low

(C) Gender
1. Boys
2. Girls

(D) Achievement level
1. High
2. Low
Dependent Variables
1. Score obtained by the students in achievement test
2. Retention score

Control Variables
1. Standard XI
2. Subject- Economics (Selected chapter only )
3. Medium- Gujarati

Intervening Variables
1. Novelty in experiment
2. Interest and enthusiasm towards subject
3. Understanding power
4. Grasping power

The investigator had worked with three groups

Group - 1 Control group (Traditional approach)
Group - 2 Experimental group-1 (Cooperative Learning Approach -Jigsaw)
Group - 3 Experimental group-2 (Cooperative Learning Approach -STAD)

6.2.4 Hypotheses of the Present Study
1. There will be no significant difference between post-test mean scores of Control group and Experimental group (Jigsaw) on achievement test.
2. There will be no significant difference between post-test mean scores of Control group and Experimental group (STAD) on achievement test.
3. There will be no significant difference between post-test mean scores of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.
4. There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (Jigsaw) on achievement test.
5. There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (STAD) on achievement test.

6. There will be no significant difference between post-test mean scores of boys of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.

7. There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (Jigsaw) on achievement test.

8. There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (STAD) on achievement test.

9. There will be no significant difference between post-test mean scores of girls of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.

10. There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (Jigsaw) on achievement test.

11. There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (STAD) on achievement test.

12. There will be no significant difference between post-test mean scores of high IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.

13. There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (Jigsaw) on achievement test.

14. There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (STAD) on achievement test.
15. There will be no significant difference between post-test mean scores of medium IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.

16. There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (Jigsaw) on achievement test.

17. There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (STAD) on achievement test.

18. There will be no significant difference between post-test mean scores of low IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.

19. There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (Jigsaw) on achievement test.

20. There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (STAD) on achievement test.

21. There will be no significant difference between post-test mean scores of high achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.

22. There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (Jigsaw) on achievement test.

23. There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (STAD) on achievement test.
24. There will be no significant difference between post-test mean scores of low achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.
25. There will be no significant difference between post-test mean scores of Control group and Experimental group (Jigsaw) on retention.
26. There will be no significant difference between post-test mean scores of Control group and Experimental group (STAD) on retention.
27. There will be no significant difference between post-test mean scores of Experimental group (Jigsaw) and Experimental group (STAD) on retention.
28. There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (Jigsaw) on retention.
29. There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (STAD) on retention.
30. There will be no significant difference between post-test mean scores of boys of Experimental group (Jigsaw) and Experimental group (STAD) on retention.
31. There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (Jigsaw) on retention.
32. There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (STAD) on retention.
33. There will be no significant difference between post-test mean scores of girls of Experimental group (Jigsaw) and Experimental group (STAD) on retention.
34. There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (Jigsaw) on retention.
35. There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (STAD) on retention.
36. There will be no significant difference between post-test mean scores of high IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.
37. There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (Jigsaw) on retention.

38. There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (STAD) on retention.

39. There will be no significant difference between post-test mean scores of medium IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.

40. There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (Jigsaw) on retention.

41. There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (STAD) on retention.

42. There will be no significant difference between post-test mean scores of low IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.

43. There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (Jigsaw) on retention.

44. There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (STAD) on retention.

45. There will be no significant difference between post-test mean scores of high achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.
46. There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (Jigsaw) on retention.

47. There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (STAD) on retention.

48. There will be no significant difference between post-test mean scores of low achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.

6.2.5 Delimitations of the study

The delimitations of the study are given below.

1. Present research was limited only for Anand district of the state – Gujarat.

2. The cooperative learning approach (Jigsaw) was used for the limited units such as ‘National Income’ and ‘The Determination of Income and Employment’ from the subject Economics of standard XI.

3. The cooperative learning approach (STAD) was used for the limited units such as ‘National Income’ and ‘The Determination of Income and Employment’ from the subject Economics of standard XI.

4. Teaching was done through cooperative learning approaches in respect to different problems on Economics in the subject of Economics.

5. The study was restricted to learning inside the classroom.

6.2.6 Research Methodology and nature of the study

The present study was an experimental study. As mentioned in the earlier sections, the investigator had worked with one control group (Group 1: taught through traditional approach) and two experimental groups (Group 2: taught through Cooperative Learning Approach -Jigsaw and group 3: taught through
Cooperative Learning Approach -STAD). The nature of present study was both quantitative and qualitative. The control group only post-test research design was used for the study.

6.2.7 Population and Sample

For the present study the population and sample is given below:

**Population**

The students of Gujarati medium of standard XI studying the Economics subject of higher secondary section of the schools situated into the Anand district of the state – Gujarat.

**Sample**

Convenient sampling technique was used to select the sample. One Secondary School of Gujarati Medium was selected using convenient sampling technique. The sample of the present study was consisted of 150 students (each group had 50 students) chosen for the study from the Pioneer high school, Anand.

<table>
<thead>
<tr>
<th>Table 6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample</strong></td>
</tr>
<tr>
<td><strong>Boys</strong></td>
</tr>
<tr>
<td>Control Group</td>
</tr>
<tr>
<td>Experimental Group 1</td>
</tr>
<tr>
<td>Experimental Group 2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

6.2.8 Research Tools

Tools use for the present study was constructed with the help and guidance of experts. The following tools were used for data collection in the present study.
A) **Standardised Tools Used**
   1. ‘Verbal non–verbal group intelligence test’ constructed and standardized by Dr. R. S. Patel.

B) **Tools constructed by Investigator**
   1. Achievement Test in Economics
   2. Questionnaire for feedback

### 6.2.9 Data Analysis and Interpretation

The data was analyzed quantitatively and qualitatively by using F- test, content analysis technique and percentage analysis.

### 6.2.10 Result of the Study

Hypotheses were tested by using F-test result found for testing of hypotheses are given below in table 6.2.

#### Table 6.2

**Results of Hypotheses Testing using F – test**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Hypothesis</th>
<th>F</th>
<th>Significant Level</th>
<th>Rejected / Not Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>There will be no significant difference between post-test mean scores of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>18.57</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>2.</td>
<td>There will be no significant difference between post-test mean scores of Control group and Experimental group (STAD) on achievement test.</td>
<td>20.07</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>3.</td>
<td>There will be no significant difference between post-test mean scores of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>0.0007</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>t-value</td>
<td>p-value</td>
<td>Significance</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>4.</td>
<td>There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>44.72</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>5.</td>
<td>There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (STAD) on achievement test.</td>
<td>48.36</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>6.</td>
<td>There will be no significant difference between post-test mean scores of boys of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>0.31</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>7.</td>
<td>There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>1.78</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>8.</td>
<td>There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (STAD) on achievement test.</td>
<td>3.29</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>9.</td>
<td>There will be no significant difference between post-test mean scores of girls of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>1.15</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>10.</td>
<td>There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>163.97</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>11.</td>
<td>There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (STAD) on achievement test.</td>
<td>134.53</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>t-value</td>
<td>p-value</td>
<td>Conclusion</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>12.</td>
<td>There will be no significant difference between post-test mean scores of high IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>1.67</td>
<td>Not Significant Not Rejected</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>8.04</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>14.</td>
<td>There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (STAD) on achievement test.</td>
<td>13.89</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>15.</td>
<td>There will be no significant difference between post-test mean scores of medium IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>0.61</td>
<td>Not Significant Not Rejected</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>43.65</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>17.</td>
<td>There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (STAD) on achievement test.</td>
<td>18.79</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>18.</td>
<td>There will be no significant difference between post-test mean scores of low IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>2.76</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>t-value</td>
<td>p-value</td>
<td>Conclusion</td>
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<td>---</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>19.</td>
<td>There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>64.70</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>20.</td>
<td>There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (STAD) on achievement test.</td>
<td>56.28</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>21.</td>
<td>There will be no significant difference between post-test mean scores of high achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>0.96</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>22.</td>
<td>There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (Jigsaw) on achievement test.</td>
<td>74.60</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>23.</td>
<td>There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (STAD) on achievement test.</td>
<td>23.82</td>
<td>0.01</td>
<td>Rejected</td>
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<tr>
<td>24.</td>
<td>There will be no significant difference between post-test mean scores of low achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on achievement test.</td>
<td>1.81</td>
<td>Not Significant</td>
<td>Not Rejected</td>
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<tr>
<td>25.</td>
<td>There will be no significant difference between post-test mean scores of Control group and Experimental group (Jigsaw) on retention.</td>
<td>354.77</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>t-value</td>
<td>p-value</td>
<td>Conclusion</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>26.</td>
<td>There will be no significant difference between post-test mean scores of Control group and Experimental group (STAD) on retention.</td>
<td>166.32</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>27.</td>
<td>There will be no significant difference between post-test mean scores of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>2.05</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>28.</td>
<td>There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (Jigsaw) on retention.</td>
<td>234.45</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>29.</td>
<td>There will be no significant difference between post-test mean scores of boys of Control group and Experimental group (STAD) on retention.</td>
<td>132.03</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>30.</td>
<td>There will be no significant difference between post-test mean scores of boys of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>9.46</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>31.</td>
<td>There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (Jigsaw) on retention.</td>
<td>140.21</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>32.</td>
<td>There will be no significant difference between post-test mean scores of girls of Control group and Experimental group (STAD) on retention.</td>
<td>108.85</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>33.</td>
<td>There will be no significant difference between post-test mean scores of girls of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>4.01</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (Jigsaw) on retention.</td>
<td>88.20</td>
<td>0.01</td>
<td>Rejected</td>
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<tr>
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<td>35.</td>
<td>There will be no significant difference between post-test mean scores of high IQ students of Control group and Experimental group (STAD) on retention.</td>
<td>55.11</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
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<td>36.</td>
<td>There will be no significant difference between post-test mean scores of high IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>8.71</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>37.</td>
<td>There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (Jigsaw) on retention.</td>
<td>16.95</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>38.</td>
<td>There will be no significant difference between post-test mean scores of medium IQ students of Control group and Experimental group (STAD) on retention.</td>
<td>13.91</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>39.</td>
<td>There will be no significant difference between post-test mean scores of medium IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>9.28</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>40.</td>
<td>There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (Jigsaw) on retention.</td>
<td>213.98</td>
<td>0.01</td>
<td>Rejected</td>
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<tr>
<td>41.</td>
<td>There will be no significant difference between post-test mean scores of low IQ students of Control group and Experimental group (STAD) on retention.</td>
<td>176.84</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>t-value</td>
<td>p-value</td>
<td>Result</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
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<td>---------</td>
</tr>
<tr>
<td>42.</td>
<td>There will be no significant difference between post-test mean scores of low IQ students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>0.78</td>
<td>Not Significant</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>43.</td>
<td>There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (Jigsaw) on retention.</td>
<td>97.31</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>44.</td>
<td>There will be no significant difference between post-test mean scores of high achievement level students of Control group and Experimental group (STAD) on retention.</td>
<td>62.53</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>45.</td>
<td>There will be no significant difference between post-test mean scores of high achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>11.34</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>46.</td>
<td>There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (Jigsaw) on retention.</td>
<td>203.87</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>47.</td>
<td>There will be no significant difference between post-test mean scores of low achievement level students of Control group and Experimental group (STAD) on retention.</td>
<td>90.56</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
<tr>
<td>48.</td>
<td>There will be no significant difference between post-test mean scores of low achievement level students of Experimental group (Jigsaw) and Experimental group (STAD) on retention.</td>
<td>4.56</td>
<td>0.01</td>
<td>Rejected</td>
</tr>
</tbody>
</table>
On the basis of testing of hypotheses as shown in table 6.2, results found for the study are given below.

1. Jigsaw approach is effective in teaching of economics than teaching by traditional approach.
2. STAD approach is effective in teaching of economics than teaching by traditional approach.
3. Jigsaw approach and STAD approach were found equally effective in teaching of economics.
4. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for boys.
5. STAD approach is effective in teaching of economics than teaching by traditional approach for boys.
6. Jigsaw approach and STAD approach were found equally effective in teaching of economics for boys.
7. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for girls.
8. STAD approach is effective in teaching of economics than teaching by traditional approach for girls.
9. Jigsaw approach and STAD approach were found equally effective in teaching of economics for girls.
10. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for high IQ students.
11. STAD approach is effective in teaching of economics than teaching by traditional approach for high IQ students.
12. Jigsaw approach and STAD approach were found equally effective in teaching of economics for high IQ students.
13. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for medium IQ students.
14. STAD approach is effective in teaching of economics than teaching by traditional approach for medium IQ students.
15. Jigsaw approach is effective in teaching of economics than teaching by STAD approach for medium IQ students.
16. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for low IQ students.
17. STAD approach is effective in teaching of economics than teaching by traditional approach for low IQ students.
18. Jigsaw approach is effective in teaching of economics than teaching by STAD approach for low IQ students.
19. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for high achievement level students.
20. STAD approach is effective in teaching of economics than teaching by traditional approach for high achievement level students.
21. Jigsaw approach and STAD approach were found equally effective in teaching of economics for high achievement level students.
22. Jigsaw approach is effective in teaching of economics than teaching by traditional approach for low achievement level students.
23. STAD approach is effective in teaching of economics than teaching by traditional approach for low achievement level students.
24. Jigsaw approach and STAD approach were found equally effective in teaching of economics for low achievement level students.
25. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of students in economics.
26. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of students in economics.
27. Jigsaw approach and STAD approach were found equally effective in teaching of economics on retention of students in economics.
28. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of boys.
29. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of boys.
30. Jigsaw approach is effective in teaching of economics than teaching by STAD approach on retention of boys.
31. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of girls.
32. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of girls.
33. Jigsaw approach is effective in teaching of economics than teaching by STAD approach on retention of girls.
34. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of high IQ students.
35. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of high IQ students.
36. Jigsaw approach is effective in teaching of economics than teaching by STAD approach on retention of high IQ students.
37. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of medium IQ students.
38. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of medium IQ students.
39. Jigsaw approach is effective in teaching of economics than teaching by STAD approach on retention of medium IQ students.
40. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of low IQ students.
41. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of low IQ students.
42. Jigsaw approach and STAD approach were found equally effective in teaching of economics on retention of low IQ students.
43. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of high achievement level students.
44. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of high achievement level students.
45. Jigsaw approach is effective in teaching of economics than teaching by STAD approach on retention of high achievement level students.
46. Jigsaw approach is effective in teaching of economics than teaching by traditional approach on retention of low achievement level students.
47. STAD approach is effective in teaching of economics than teaching by traditional approach on retention of low achievement level students.
48. Jigsaw approach is effective in teaching of economics than teaching by STAD approach on retention of low achievement level students.

6.2.11 Overview of the Research Procedure

1. A number of research studies related to the study were reviewed by the investigator.
2. The investigator had arranged informal talk with teacher educators, school teachers teaching Economics and discussed with them about the group learning approaches and selected chapter from the subject economics from standard XI for preparing lesson plan.
3. Lesson plans based on two approaches viz. (Jigsaw & STAD-Cooperative learning approaches) and group tasks were constructed and standardized (expert’s opinion).
4. The investigator had constructed achievement test in Economics subject of Std XI. The items were standardize (expert’s opinion).
5. The investigator had prepared feedback questionnaire for getting student’s feedback for the programme. The feedback questionnaire was standardized (expert’s opinion).
6. The investigator had used Verbal non–verbal group intelligence test (constructed and standardized by Dr. R.S.Patel) for data collection before starting experiment.

7. The necessary instructions were given to the experimental groups before starting with both the approaches.

8. Intervention programme was implemented and the post-test was administered on the students. The data collected by using Achievement test, Intelligence test, Feedback Questionnaire and Students experience was analyzed quantitatively and qualitatively by using F – test, content analysis and Percentage analysis.

6.2.12 Observations of the Present Study

Following are the observations of the present study.

1. Students found cooperative approach interesting in learning Economics subject.

2. Students have never learnt Economics subject using cooperative approach.

3. Students were excited to participate and enjoyed learning through cooperative approach.

4. Learning Economics subject through cooperative approach created joyful atmosphere for students.

5. Students were ready to work with interactive and challenging activities.

6. Students were engrossed in doing activity in the group and think critically as well as creatively to complete the assigned tasks.

7. Students’ positive attitude was found towards the subject content while teaching through cooperative approach.

8. Students felt free to share, express their ideas, views, accept each other’s ideas, and solve the doubts, discussed with group members in a group and came to the final answer.
9. Students appreciated printed learning materials like pictures, picture sets, cards, handouts, worksheets etc. that helped them to think beyond the textbook.

10. Students found more accountable towards their work with increased self confidence.

6.2.13 Implications of Study

Following are the educational implications of the present study:

1. Cooperative Learning Approaches should be used to enhance the group learning in Economics of Std XI students.

2. Cooperative Learning Approaches should be used to enhance learning of students with High, and Low achievement level.

3. Cooperative Learning Approaches should be used to enhance learning of students with High, Medium and Low IQ level.

4. Cooperative Learning Approaches should be used to enhance learning of students with High, and Low achievement level on retention.

5. Cooperative Learning Approaches should be used to enhance learning of students with High, and Low achievement level on retention.

6. Cooperative Learning Approaches should be used to enhance learning of students with High, Medium and Low IQ level on retention.

7. Cooperative Learning Approaches help students to develop interest towards the subject.

8. Cooperative Learning Approaches helped students to build confidence, develops oral Communication, share and accept ideas of each other, feeling of trust worthiness, positive Interdependence, team building, etc.

9. The group tasks should be developed for all the subjects that enhance Cooperative Learning.

10. Teachers of the Economics subject should adopt Cooperative Learning Approaches as an effective Learning strategy in order to improve student’s performance and social interaction skills.
6.2.14 Recommendations for further studies

Following are the recommendations for further studies:

1. A study of the learning achievement of upper primary school students taught by Cooperative Learning Approach in different subjects could be carried out.

2. A study of the learning achievement of students taught by Cooperative learning Approach in different Approach could be carried out.

3. Cooperative learning Approach should be compared with the other Approaches and approaches like structural approach, communicative approach, computer assisted learning and programme learning Approach.

4. The Jigsaw learning material should be developed on the other units of Economics subject of XI.

5. The STAD learning material should be developed on the other units of Economics subject of XI.

6. A study of Cooperative Learning Approaches could be carried out on students of Primary education, higher secondary education and higher studies.

7. A study of Cooperative Learning Approaches could be carried out in various secondary school subjects like mathematics, social science, languages etc.

8. A comparative study could be carried out for Cooperative Learning Approaches and Traditional Approach at different level of education and in different subjects.

9. A study could be carried out for development and tryout of Cooperative learning lesson plans.

10. A study could be carried out to find the effectiveness of Cooperative Learning Approaches on students’ attitude towards the subject.

11. A study could be carried out to find the effectiveness of Cooperative Learning Approaches on students self esteem.