Chapter 6

SUMMARY, CONCLUSIONS AND SUGGESTIONS

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SUMMARY, CONCLUSIONS AND SUGGESTIONS

This chapter presents the summary of procedures used for the study, the objectives and the hypotheses of the study, the conclusions based on the findings and their discussions, the educational implications and suggestions for further research.

6.1 Summary of the Procedures used for the Study

The major objective of the study was to test the effectiveness of critical pedagogy combined with constructivist approach in the learning of commerce at the higher secondary level. This was done by testing the effect of critical pedagogy combined with constructivist approach on achievement, retention power and social and emotional skills.

A sample of 140 students from two schools of Thiruvananthapuram district was selected for the study. Experimental method using pre-test post-test non-equivalent group design was adopted for the study. Two groups such as Experimental group and Control group were selected for the study.

The following tools, techniques and learning materials were prepared and used for collecting data.

1. Prerequisite test
2. Formative Assessment
3. Summative Assessment (Achievement tests)
   a) Achievement Test - I (Fixed response type)
   b) Achievement Test - II (Free response type)

4. Social and Emotional Skills Inventory

5. Lesson transcripts based on Critical Pedagogy Combined with Constructivist Approach

6. Lesson transcripts based on Activity Based Approach

7. Focus Group Discussions

The data collected were analysed by applying statistical techniques such as Critical Ratio and ANCOVA to compare the effectiveness of critical pedagogy combined with constructivist approach in the learning of commerce at the higher secondary level.

6.2 Hypotheses of the Study

The following hypotheses were formulated for the study.

1. Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the achievement of learners of commerce at the higher secondary level.

2. Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the retention level of learners of commerce at the higher secondary level.

3. Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing social and emotional skills of learners of commerce at the higher secondary level.
4. Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the achievement of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale.

5. Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the retention level of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale.

6. Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing social and emotional skills of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale.

6.3 Objectives of the study

1. To compare the effect of critical pedagogy combined with constructivist approach with that of activity based approach in enhancing the achievement of learners of commerce at the higher secondary level.

2. To compare the effect of critical pedagogy combined with constructivist approach with that of activity based approach in enhancing the retention level of learners of commerce at the higher secondary level.

3. To compare the effect of critical pedagogy combined with constructivist approach with that of activity based approach in enhancing social and emotional skills of learners of commerce at the higher secondary level.

4. To compare the effect of critical pedagogy combined with constructivist approach with that of activity based approach in enhancing the achievement of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale.
5. To compare the effect of critical pedagogy combined with constructivist approach with that of activity based approach in enhancing the retention level of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale.

6. To compare the effect of critical pedagogy combined with constructivist approach with that of activity based approach in enhancing social and emotional skills of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale.

6.4 Conclusions Based on the Findings

6.4.1 Effectiveness of Critical Pedagogy Combined with Constructivist Approach on Achievement (Based on Whole Sample)

Achievement was measured by using achievement test - I (fixed response type) and achievement test - II (free response type). The experimental and control groups were compared on the basis of total achievement scores, scores of achievement test - I and scores of achievement test - II. The comparison of experimental group and control group are given under the sub-sections below.

6.4.1.1 Total Achievement

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the total achievement of learners of commerce at the higher secondary level.

This is supported by the following findings.

1. When the post-test scores of students in the experimental and control groups
were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 12.41, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 77.36, and Mean (M₂) of the control group = 52.41]

2. When the gain scores (post-test score - pre-test score of learners) in the experimental group and the control group were compared, the difference between their means was found to be significant (Critical ratio, CR = 14.50, P<0.01). The experimental group outperformed the control group [Mean (M₁) for experimental group = 60.71, and Mean (M₂) for the control group = 35.86]

3. The Analysis of Co-variance of pre-test scores and post-test scores of learners in the experimental and control groups showed significant difference between the two groups (Fy.x of df = 1/137 = 208.79, P<0.01). The experimental group was found to be much better than the control group in total achievement (M₁y.x = 77.31 and M₂y.x = 52.46).

4. The adjusted means for post-test scores were tested for significance for df = 1/137. The t value obtained was significant at 0.01 level (t = 14.45; P<0.01). The significant t value confirms that the two means differ considerably. It is clear that the experimental group excelled the control group in performance.

6.4.1.2 Achievement based on Achievement Test - I (Fixed Response Type)

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - I) of learners of commerce at the higher secondary level.
The conclusion is supported by the following findings.

1. When the post-test scores of students in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 11.68, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 39.31, and Mean (M₂) of the control group = 27.47]

2. When the gain scores (post-test score - pre-test score) of learners in the experimental group and the control group were compared, the difference between their means was found to be significant (Critical ratio, CR = 13.03, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 27.13, and Mean (M₂) of the control group = 15.04]

3. The Analysis of Co-variance of pre-test scores and post-test scores of learners in the experimental and the control groups showed significant different between the two groups (Fy.x for df = 1/137 = 184.22, P<0.01). The experimental group was found much better than the control group in achievement based on achievement test - I (M₁ y.x = 39.39 and M₂ y.x = 27.40).

4. The adjusted means for post-test scores were tested for significance for df = 1/137. The t value obtained was significant at 0.01 level (t = 13.58; P< 0.01). The significant t value confirms that the two means differ considerably. The conclusion is that the experimental group excelled the control group in performance.

6.4.1.3 Achievement based on Achievement Test - II (Free Response Type)

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based
on achievement test - II) of learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

1. When the post-test scores of students in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 12.27, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 38.04, and Mean (M₂) of the control group = 24.94]

2. When the gain scores (post-test score - pre-test score) of learners in the experimental group and the control group were compared, the difference between their means was found to be significant (Critical ratio, CR =13.23, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 33.83, and Mean (M₂) of the control group = 20.81]

3. The Analysis of Co-variance of pre-test scores and post-test scores of learners in the experimental and the control groups showed significant difference between the two groups (Fy.x for df = 1/137 = 178.60 P<0.01). The experimental group was found much better than the control group in achievement based on achievement test - II (M₁ y.x = 37.97 and M₂ y.x = 25.02).

4. The adjusted means for post-test scores were tested for significance for df = 1/137. The t value obtained was significant at 0.01 level (t = 13.37 ; P<0.01). The significant t value confirms that the two means differ considerably. The conclusion is that the experimental group excelled the control group in performance.
6.4.2 Effectiveness of Critical Pedagogy Combined with Constructivist Approach on Retention (Based on Whole Sample)

Retention was measured on the basis of retention scores of total achievement, retention scores of achievement test - I (fixed response type) and retention scores of achievement test - II (free response type) from the point of view of analysis of data, which is given under the sub-sections below.

6.4.2.1 Retention of Total Achievement

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on total achievement) of learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of learners in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 3.53, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 196.92, and Mean (M₂) of the control group = 184.78].

6.4.2.2 Retention on Achievement based on Achievement Test - I (Fixed Response Type)

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - I) of learners of commerce at the higher secondary level.
The conclusion is supported by the following findings.

When the retention scores of learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.07, P<0.01). The experimental group outperformed the control group [mean (M₁) of experimental group = 99.85, and mean (M₂) of the control group = 95.77].

6.4.2.3 Retention on Achievement based on Achievement Test - II (Free Response Type)

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - II) of learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 3.32, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 97.07, and Mean (M₂) of the control group = 89.01].

6.4.3 Effectiveness of Critical Pedagogy Combined with Constructivist Approach on Social and Emotional Skills (Based on Whole Sample)

The variable ‘social and emotional skills’ is measured based on social skills,
emotional skills and social and emotional skills as a whole from the point of view of analysis of data, which is given under the sub-sections below.

6.4.3.1 Social and Emotional Skills

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social and emotional skills of learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

1. When the post-test scores of students in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 18.36, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 120.33, and Mean (M₂) of the control group = 86.59]

2. When the gain scores (post-test score - pre-test score) of learners in the experimental group and the control group were compared, the difference between their means was found to be significant (Critical ratio, CR =15.97, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 54.23, and Mean (M₂) of the control group =21.04].

6.4.3.2 Social Skills

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social skills of learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.
When the post-test scores of students in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 16.45, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 60.83, and Mean (M₂) of the control group = 43.67].

When the gain scores (post-test score - pre-test score) of learners in the experimental group and the control group were compared, the difference between their means was found to be significant (Critical ratio, CR = 13.03, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 27.29, and Mean (M₂) of the control group = 10.79].

6.4.3.3 Emotional Skills

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the emotional skills of learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

1. When the post test scores of students in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 15.34, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 59.50, and Mean (M₂) of the control group = 42.99].

2. When the gain scores (post-test score - pre-test score) of learners in the experimental group and the control group were compared, the difference between their means was found to be significant (Critical ratio, CR = 13.03, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 26.94, and Mean (M₂) of the control group = 10.26].
6.4.4 Effectiveness of Critical Pedagogy Combined with Constructivist Approach on Achievement (Based on Sub-sample)

Achievement is measured in terms of total achievement, achievement of achievement test - I and achievement of achievement test - II by selected characteristics such as gender and locale which is given under the sub-sections below.

6.4.4.1 Total Achievement

Achievement of learners in the experimental group and the control group were compared with the test of significance by selected characteristics such as gender and locale.

6.4.4.1.1 Total Achievement of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the total achievement of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and the control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 8.55, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 77.36, and Mean (M₂) of the control group = 53.75].
6.4.4.1.2 Total Achievement of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the total achievement of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 8.85, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 77.36, and Mean (M₂) of the control group = 51.00].

6.4.4.1.3 Total Achievement of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the total achievement of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 7.04, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 78.75, and Mean (M₂) of the control group = 59.92].
6.4.4.1.4 Total Achievement of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the total achievement of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 11.04, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 76.63, and Mean (M₂) of the control group = 48.50].

6.4.4.2 Achievement based on Achievement Test - I (Fixed Response Type)

Achievement of learners in the experimental group and control group were compared with the test of significance by selected characteristics such as gender and locale.

6.4.4.2.1 Achievement of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - I) of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.
When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 7.54, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 38.93, and Mean (M₂) of the control group = 28.39].

6.4.4.2.2 Achievement of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - I) of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 9.06, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 39.89, and Mean (M₂) of the control group = 26.50].

6.4.4.2.3 Achievement of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - II) of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.
When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 7.07, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 40.42, and Mean (M₂) of the control group = 31.13].

6.4.4.2.4 Achievement of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - I) of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 10.15, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 38.74, and Mean (M₂) of the control group = 25.57].

6.4.4.3 Achievement based on Achievement Test - II (Free Response Type)

The Achievement (based on achievement test - II) of learners in the experimental group and the control group were compared with the test of significance in terms of gender and locale.
6.4.4.3.1 Achievement of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - II) of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 8.85, P<0.01). The experimental group outperformed the control group [Mean (M1) of experimental group = 38.43, and Mean (M2) of the control group = 25.36].

6.4.4.3.2 Achievement of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - II) of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 8.27, P<0.01). The experimental group outperformed the control group [Mean (M1) of experimental group = 37.46, and Mean (M2) of the control group = 24.50].
6.4.4.3.3 Achievement of rural school learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - II) of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 6.53, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 38.33, and Mean (M₂) of the control group = 28.79].

6.4.4.3.4 Achievement of Urban School learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the achievement (based on achievement test - II) of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of students in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 11.07, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 37.89, and Mean (M₂) of the control group = 22.93].
6.4.5 Effectiveness of Critical Pedagogy Combined with Constructivist Approach on Retention (Based on Sub-samples)

Retention is measured in terms of retentions scores of total achievement, achievement of achievement test - I and achievement of achievement test - II by selected characteristics such as gender and locale which is given under the sub-sections below.

6.4.5.1 Retention of Total Achievement

The Retention scores of total achievement of learners in the experimental and control groups were compared with test of significance with respect to gender and locale.

6.4.5.1.1 Retention of Total Achievement of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on total achievement) of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of boys in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.65, P<0.05). The experimental group outperformed the control group [Mean (M₁) of experimental group = 196.52, and Mean (M₂) of the control group = 185.12].
6.4.5.1.2 Retention of Total Achievement of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on total achievement) of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of girls in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.31, P<0.05). The experimental group outperformed the control group [mean (M₁) of experimental group = 197.51, and mean (M₂) of the control group = 184.42].

6.4.5.1.3 Retention of Total Achievement of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on total achievement) of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of rural school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.18, P<0.05). The experimental group outperformed the control group [Mean (M₁) of experimental group = 193.92, and Mean (M₂) of the control group = 179.56].
6.4.5.1.4 Retention of Total Achievement of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on total achievement) of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of urban school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.81, P<0.01). Since the mean scores of urban school learners in the experimental group is higher than that of control group it can be interpreted that there is significant difference in the retention level of urban school learners in both groups in their performance. [Mean (M₁) of experimental group = 198.74, and mean (M₂) of the control group = 187.50].

6.4.5.2 Retention of Achievement (Based on Achievement Test - I)

Retention scores of achievement (based on achievement test - I) of learners in the experimental and control groups were compared with test of significance with respect to gender and locale.

6.4.5.2.1 Retention of Achievement of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - I) of boys of commerce at the higher secondary level.
The conclusion is supported by the following findings.

When the retention scores of boys in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.03, P<0.01). The experimental group outperformed the control group [mean (M₁) of experimental group = 100.75, and mean (M₂) of the control group = 95.68].

6.4.5.2.2 Retention of Achievement of Girls

Critical Pedagogy Combined with Constructivist Approach and Activity based Approach are both equally effective in enhancing the retention level (based on achievement test - I) of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of girls in the experimental and control groups were compared, the difference between their means was found to be statistically insignificant (Critical ratio CR = 0.83, P>0.05). Therefore it can be interpreted that there is no significant difference in the retention level of girls in both groups in their performance [Mean (M₁) of experimental group = 98.51 and Mean (M₂) of the control group = 95.86].

6.4.5.2.3 Retention of Achievement of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach and Activity based Approach are both equally effective in enhancing the retention level (based on achievement test - I) of rural school learners of commerce at the higher secondary level.
The conclusion is supported by the following findings.

When the retention scores of rural school learners in the experimental and control groups were compared, the difference between their means was found to be statistically insignificant (Critical ratio CR = 1.50, P>0.05). Therefore it can be interpreted that there is no significant difference between the rural school learners in both groups in their retention level of achievement. [Mean (M₁) of experimental group = 97.54, and Mean (M₂) of the control group = 92.17].

6.4.5.2.4 Retention of Achievement of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach and Activity based Approach are both equally effective in enhancing the retention level (based on achievement test - I) of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of urban school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 1.48, P>0.05). Therefore it can be interpreted that there is no significant difference between the urban school learners in both groups in their retention level of achievement. [Mean (M₁) of experimental group = 101.06, and Mean (M₂) of the control group = 97.65].

6.4.5.3 Retention of Achievement (Based on Achievement Test - II)

The Retention scores of achievement (Based on achievement test - II) of learners in the experimental and control groups were compared with test of significance with respect to gender and locale.
6.4.5.3.1 Retention of Achievement of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - II) of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of boys in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.07, P<0.05). The experimental group outperformed the control group [mean (M₁) of experimental group = 95.77, and mean (M₂) of the control group = 89.44].

6.4.5.3.2 Retention of Achievement of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - II) of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retention scores of girls in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.65, P<0.05). The experimental group outperformed the control group [Mean (M₁) of experimental group = 99.00, and Mean (M₂) of the control group = 88.56].
6.4.5.3.3 Retention of Achievement of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - II) of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retentions scores of rural school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.02, P<0.05). The experimental group outperformed the control group [mean (M₁) of experimental group = 95.88, and mean (M₂) of the control group = 87.39].

6.4.5.3.4 Retention of achievement of urban school learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the retention level (based on achievement test - II) of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the retentions scores of urban school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio CR = 2.62, P<0.05). The experimental group outperformed the control group [mean (M₁) of experimental group = 97.68, and mean (M₂) of the control group = 89.85].
6.4.6 Effectiveness of Critical Pedagogy Combined with Constructivist Approach on Social and Emotional Skills (Based on Sub-samples)

Social and emotional skills was measured based on the scores of social skills, emotional skills and social and emotional skills as a whole from the point of view of analysis of data which is given under the sub-sections below.

6.4.6.1 Social and Emotional Skills

The social and emotional skills of learners in the experimental and control groups were compared with test of significance with respect to gender and locale.

6.4.6.1.1 Social and Emotional Skills of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social and emotional skills of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of boys in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 14.11, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 123.19, and Mean (M₂) of the control group = 87.06]
6.4.6.1.2 Social and Emotional Skills of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social and emotional skills of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of girls in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 11.97, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 116.04, and Mean (M₂) of the control group = 86.09].

6.4.6.1.3 Social and Emotional Skills of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social and emotional skills of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of rural school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 9.10, P<0.01). The experimental group out performed the control group [Mean (M₁) of experimental group = 116.38, and Mean (M₂) of the control group = 87.67].
6.4.6.1.4 Social and Emotional Skills of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social and emotional skills of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of urban school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 16.38, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 122.39, and Mean (M₂) of the control group = 86.02].

6.4.6.2 Social Skills

The social skills of learners in the experimental and control groups were compared with test of significance with respect to gender and locale.

6.4.6.2.1 Social Skills of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social skills of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of boys in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 14.32, P<0.01). The experimental group
outperformed the control group [Mean (M₁) of experimental group = 62.76, and Mean (M₂) of the control group = 43.25].

6.4.6.2.2 Social Skills of Girls

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social skills of girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of girls in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 9.12, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 57.93, and Mean (M₂) of the control group = 44.12].

6.4.6.2.3 Social Skills of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social skills of rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of rural school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 6.54, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 58.33, and Mean (M₂) of the control group = 45.79].
6.4.6.2.4 Social Skills of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the social skills of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of urban school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 16.74, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 62.13, and Mean (M₂) of the control group = 42.57].

6.4.6.3 Emotional Skills

The emotional skills of learners in the experimental and control groups were compared with test of significance with respect to gender and locale.

6.4.6.3.1 Emotional Skills of Boys

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the emotional skills of boys of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of boys in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 11.13, P<0.01). The experimental group
outperformed the control group [Mean (M₁) of experimental group = 60.43, and 
Mean (M₂) of the control group = 43.81].

6.4.6.3.2 Emotional Skills of Girls

Critical Pedagogy Combined with Constructivist Approach is more 
effective than Activity based Approach in enhancing the emotional skills of 
girls of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of girls in the experimental and control groups 
were compared, the difference between their means was found to be statistically 
significant (Critical ratio, CR = 10.42, P<0.01). The experimental group 
outperformed the control group [Mean (M₁) of experimental group = 58.11, and 
Mean (M₂) of the control group = 41.97].

6.4.6.3.3 Emotional Skills of Rural School Learners

Critical Pedagogy Combined with Constructivist Approach is more 
effective than Activity based Approach in enhancing the emotional skills of 
rural school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of rural school learners in the experimental and 
control groups were compared, the difference between their means was found to 
be statistically significant (Critical ratio, CR = 9.98, P<0.01). The experimental 
group outperformed the control group [Mean (M₁) of experimental group = 58.04, 
and Mean (M₂) of the control group = 41.88].
6.4.6.3.4 Emotional Skills of Urban School Learners

Critical Pedagogy Combined with Constructivist Approach is more effective than Activity based Approach in enhancing the emotional skills of urban school learners of commerce at the higher secondary level.

The conclusion is supported by the following findings.

When the post-test scores of urban school learners in the experimental and control groups were compared, the difference between their means was found to be statistically significant (Critical ratio, CR = 11.97, P<0.01). The experimental group outperformed the control group [Mean (M₁) of experimental group = 60.26, and Mean (M₂) of the control group = 43.46].

6.5 Discussions Based on the Findings

Based on the findings critical pedagogy combined with constructivist approach has been found to be most useful to the students in enhancing achievement, retention and social and emotional skills as part of learning commerce.

These findings regarding achievement variable are supported by results of earlier studies on constructivism conducted by Soeharto (1998), Lord (1999), Turgut (2001), Abboutt, Jaeffery and Duane (2003), Kim (2005), Karaduman and Gultekin (2007).

The findings regarding the retention power of pupils in the study is supported by earlier studies conducted on constructivism by Koc's (2002) and, Karaduman and Gultekin (2007).
6.6 Tenability of Hypotheses

On the basis of the findings, the first hypothesis ‘Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the achievement of learners of commerce at the higher secondary level’ was accepted.

On the basis of the findings, the second hypothesis ‘Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the retention level of learners of commerce at the higher secondary level’ was found tenable and was accepted.

On the basis of the findings, the third hypothesis ‘Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing social and emotional skills of learners of commerce at the higher secondary level’ was accepted.

‘Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the achievement of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale’ which was the fourth hypothesis was accepted based on the findings.

‘Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing the retention level of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale’ which was the fifth hypothesis, was partially accepted based on the findings.
On the basis of the findings, the sixth hypothesis ‘Critical pedagogy combined with constructivist approach is more effective than activity based approach in enhancing social and emotional skills of learners of commerce at the higher secondary level in all sub-samples taken by gender and locale’ was also tenable and accepted.

6.7 Educational Implications

The findings of the study proves that critical pedagogy combined with constructivist approach is more effective in enhancing achievement, retention, and social and emotional skills which helps the learners of commerce of higher secondary level to improve their learning. This has greater importance in teaching of commerce as it can be helpful to promote the concept ‘every child should learn' by ensuring the attainment of process skills and concepts on the part of all students irrespective of their initial ability.

Critical pedagogy combined with constructivist approach helps teachers to facilitate curriculum transaction by creating an environment that promotes and sustains learning among students. Learning strategies that evoke curiosity, questioning, analysis, synthesis and creativity among the learners would help sustain learner interest. The teacher should ascertain the diverse needs of the learners while planning instruction. The study can be taken as example and can be used by teachers of commerce at the higher secondary level. Teachers can be provided with occupational training to prepare lesson transcripts and other learning materials on all topics of the subjects 'Business Studies' and 'Accountancy' according to critical pedagogy combined with constructivist approach.
The learning strategies adopted in this approach includes case studies from the students' locality, debate, group discussion, community service projects, exhibitions and social intervention programmes which help learners to learn the unit holistically. The learning process of the whole unit centres round the themes which addresses the social issues existing in the students’ locality, for example, consumerism or pedagogic issues for learning the concepts. Rather than confining learning to a few limited areas or attempting to compartmentalise learning, the classroom process provided opportunity to establish cause effect relationships and establish inter linkages so that learners can begin to understand their own local reality within a wider context.

Critical pedagogy combined with constructivist approach helps in building learning communities because it has provided chances to parents to get to know the progress of learning of their children. It also provides chances to the students to interact with the local community. While acknowledging that learners have diverse needs and interests, it facilitates the process of developing a variety of programmes, using technology wherever possible.

The students should be trained to be independent in their cognitive thinking so that they may have their own style of learning as well as their interests. The co-curricular activities such as Commerce Club activities like quiz, making of products for sale, making of advertisement copies, conducting debates and so on should be more rigorously included in the curricular transaction to enhance expressiveness of students. School environment should be one that stimulates creativity in the students, cognitively encouraging, less permissive and more accepting for better learning. The school teachers should give special attention to the students to
enhance their self-esteem for better performance. The school examination should not merely focus on memorization but it must also help the students in their learning and cognitive thinking. Questions testing higher order thinking skills are given priority according to this approach. Teachers should be oriented to take care of the characteristics of students especially with regard to cognitive thinking, learning styles and motivation in order to make learning-teaching process more interesting. A technology-rich environment can be provided to students which gives dynamic displays, visualization, stimulates and models, which allow students to attain higher order thinking skills.

Critical pedagogy combined with constructivist approach provides the learner autonomy, promotes co-operative learning, collaborative learning, encourages students to bring social experiences to the classroom and discusses and links with the concepts related to the unit. The approach also strengthens dialectical thinking and promotes dialogical approach along with the attainment of process skills and concepts. The social and emotional skills of the students are also strengthened as per study. Therefore, it becomes necessary for the teachers to apply the critical pedagogy combined with constructivist approach for improving the affective outcomes such as social and emotional skills of the learners. This helps the students to solve real life problems and develop life skills.

The formative assessment tools adopted in the experimental procedure were found to be very effective as it continuously assesses the progress of the students with regard to the learning processes they go through as well as the products they create. This assessment allows students to use their higher order thinking skills as they collaborate with teachers in the assessment of the teaching and learning
process. In order to fully reap the benefits of the use of performance assessment and portfolio assessment, the teachers and students must first understand the guidelines for their use. The guidelines focus on team effort in assessing the child's progress and development in the classroom. They emphasise the importance of the right kind of environment, the need for both the teacher and the student to receive training with regard to data collection, the importance of both the teacher and the student in establishing and understanding a clear purpose for each assessment, the need for both the teacher and the student to be involved in determining the scoring/evaluation criteria, and the importance of the teacher providing an appropriate setting in which to demonstrate the performance and how it will be stored. When students are given opportunities to create authentic products, they often become more engaged, motivated, and committed to their own learning. Performance assessment and portfolio assessment give students with opportunities to express their individuality and creativity.

While transacting the curriculum, the students should be familiarised with the learning objectives, assessment task, and the assessment criteria for their better performance. Selected approach should take into consideration the age and developmental levels of students. Students should be properly motivated in the beginning of the process. Students should be made aware of the value of learning from one another.

It should be emphasised that this approach replaces the current techniques in the higher secondary school curriculum. The approach advocates that the current curriculum integrate the principles and techniques of critical pedagogy combined with constructivist approach. The findings and the recommendations of the study
may be informed to the curriculum developers. While preparing new curriculum for commerce, the curriculum developers can use it for improving the curriculum preparation process keeping in view the features of this approach.

According to this approach care should be taken to focus on the marginalised groups such as poor and the disadvantaged learners while framing curriculum. The collaborative work of learners and the local community should be ensured while developing a curriculum. Participatory processes would facilitate the curriculum development process. Sensitivity to the culture of the learners and the use of local language would ensure learner involvement and learner motivation. A clear assessment policy has to be developed at the higher secondary level by Curriculum developers which will help the teachers, students and the parent community to conceive a broader outlook of assessment.

Student teachers should be encouraged to analyse the approach and explore the possibilities of incorporating it into their daily practices. Student teachers should be advised to read and evaluate these studies so that they can utilise the gains of the curricula where this learning approach is used. Either learning objectives that require this approach to be employed should be incorporated into the current programmes or the current objectives should be pursued using these approaches. The study is helpful for the textbook developers while preparing textbooks according to this approach, by incorporating content with pedagogy.

The findings of the study shows that what the Investigator aimed at have achieved positive results from this experimental study. This is because of the unique features of critical pedagogy and constructivist approach. This approach
promotes among students team spirit, co-operation rather than competition, a ‘We’ feeling instead of an ‘I’ feeling, transaction of curriculum instead of transmission of curriculum, group learning in the place of individualised learning, construction of knowledge and not reception of knowledge, continuous assessment instead of examination, dialectical thinking and authentic dialogues among all students. This approach gives equal treatment to all students. The above features and especially the social interactions and exposures given to the students enhance to a great extent their social and emotional skills. The systematic procedure adopted for the classroom transaction according to this approach and the assessment measures taken were the important factors which produced the present findings of the study.

6.8 Suggestions for Further Research

Ample opportunities are available for conducting further research on this topic. Further studies can be taken either at micro level of the variables of the study or at a broad level taking other variables also. The suggestions for further research are given below.

1. A study can be undertaken to test the effectiveness of critical pedagogy combined with constructivist approach in learning other subjects at higher secondary level.

2. A study can be done to formulate the perception of teachers regarding the role of critical pedagogy in enhancing overall development of the students at primary, secondary and higher secondary level.

3. The effect of critical pedagogy combined with constructivist approach on enhancing the critical thinking, creative thinking and problem solving skills of learners of commerce at the higher secondary level can be researched.
4. This study can be replicated with a larger sample size.

5. This study concentrated only at higher secondary level. It can be done at primary and secondary levels.

6. The study can be extended to many variables under affective domain with large sample.

7. The effect of critical pedagogy combined with constructivist approach on enhancing the life skills of higher secondary students can be studied.

8. A qualitative study can be taken up to assess the impact of critical classroom practices based on the combined effect of critical pedagogy and constructivist approach.

9. A study on the development of curriculum for a specific subject based on constructivism and critical pedagogy and the effectiveness of its implementation on selected topics at primary, secondary and higher secondary level.

10. A study can be undertaken for exploring the prospective teachers’ critical thinking skills based on constructivism and critical pedagogy.