



## AN EMPIRICAL STUDY ON CRITICAL PEDAGOGICAL APPROACH IN SOCIAL SCIENCE WITH SPECIAL EMPHASIS TO CRITICAL THINKING ABILITY IN SECONDARY STUDENTS IN KERALA

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### ABSTRACT:

Today's classrooms are structured by multiple layers of complexity. Critical pedagogy explores the relationship between power and knowledge, a complex relationship that stems from extreme forms of heterogeneity characterizing today's educational and social settings. This understanding compels a pedagogue to interrogate issues of privilege, notions of neutrality and objectivity, and the notion that politics should be kept out of education. By focusing on the margins of society, this pedagogy seeks to throw light on communities, voices, texts, and perspectives that have been traditionally excluded. The present paper tries to examine the critical pedagogical approach in social science with special emphasis to critical thinking ability in secondary students in Kerala. The result shows that critical pedagogical approach has had a positive impact on developing the critical thinking ability in students in social science classroom.



**KEYWORDS:** Critical Pedagogy, Critical Thinking, Social Science.

### INTRODUCTION

Critical Pedagogy (Kincheloe (2005), best known as CP, is concerned with transforming relations of power which are oppressive and which lead to the oppression of people. Critical pedagogy is pedagogy for the purpose of enabling the learner become aware of, conscious of, conditions in his life, in society and to have the necessary skills knowledge and resources, to be able to plan and create change. It is conscious raising. It draws out an

individual's ability to see the true situation and able to discover the possibilities of interaction and then act on them. It is not simply action based on reflection. It is action which embodies certain qualities. These include a commitment to human well-being and the search for truth, and respect for others. It may also refer to the act of engaging, applying, exercising, realizing, or practicing ideas. It requires that a person 'makes a wise and prudent practical judgment about how to act

in a situation' (Carr and Kemmis 1986). In a dialogic classroom, teachers are supposed to listen to their students and learn about their problems that are important within their communities and ask questions that raise students' understanding of these problems from a societal perspective and then finding ways to take political actions to solve them. In Shor's (1996) opinion, dialogue must balance teacher authority with student input. The framework for the manner in

which teaching is carried out, in an empowering and therapeutic approach, is presented by critical pedagogy. Students, through this technique, develop vital skills and become aware of their surroundings. In addition, teachers put into action their thoughts and skills in ensuring proper transmission of required information to the students. In the present study the teaching learning process of critical pedagogical approach were divided into different phases. They are **Generative themes**, **Topical themes** and **Academic themes** and finally **creative action phase**.

**Generative themes** are “provocative themes discovered as unresolved social problems in the community, good for generating discussion in class on the relation of personal life to larger issues” (Shor, 1992). **Topical themes** are “social question[s] of key importance locally, nationally, or globally” (Shor, 1992). Topical themes are not generated by student discussion in class. The teacher brings topical themes to the students. **Academic themes** are also introduced in class by the teacher. Academic themes are what we as students are most used to being exposed to in schools. Nevertheless, a creative, critical teacher can tie together academic and topical themes. **Creative action phase**: this is the action phase of learning. Where students take the new knowledge or theory and use it to improve the life of the community and the move of learning from the class room to the real world of the students. This may in the form of creative work done by the students, community participation in different context, addressing some issues that are prevailing in the society, suggesting solutions for problems they faced in life and society etc..

### NEED OF THE STUDY

Social studies play an essential role to provide social, cultural, and analytical skills required to adjust to an increasingly interdependent world, and to deal with political and economic realities. It enables children to understand the society in which they live-to-learn how society is structured, managed, and governed; and also about the forces seeking to transform and redirect society in various ways. It carries special responsibility in preparing a child to become a well responsible citizen in the society and develop a critical consciousness on their own learning and the social interaction with one another in the society. With these views subject of social studies has been given the status of a core subject in the curriculum of ten-year schooling as recommended by Iswarbai Patel Committee (1977).

In this context there is a real need for a transition from traditional teaching to new approaches which help the student to construct knowledge. In social studies teaching using critical pedagogical approach have high scope for developing critical thinking ability and value preferences. Social studies education aims to shift from the predominance of knowledge transfer in the classroom to a curriculum that promotes higher order thinking skills in students. Moreover, the expansion of knowledge in every spheres of learning demands promotion of autonomous learning skills in students to help them seek information that they need in their career and life and the skills that are required to effectively exploit the available information.

### OBJECTIVE/HYPOTHESIS

Critical thinking ability of students in experimental group would be higher than control group after teaching of social studies through critical pedagogical approach.

### HYPOTHESES

In order to test the hypotheses mentioned above, the following null hypotheses were formulated:

H<sub>0</sub>1: There is no significant difference in the post-test scores on critical thinking in social studies of experimental and control group students.

H<sub>0</sub>2: There is no significance difference between the gain scores on critical thinking in social studies of experimental and control group students

H<sub>0</sub>3: There is no significant difference between pre- and post-test scores on critical thinking ability in social studies of experimental group students.

H<sub>0</sub>4: There is no significance difference between the dimension wise analysis of pre- and post-test scores on critical thinking ability in social studies of experimental group students.

H<sub>05</sub>: There is no significant difference in the post-test scores on critical thinking ability in social studies of experimental and control group students when pre-test on critical thinking ability were taken as covariates.

## METHODOLOGY

The study was quasi-experimental in nature, wherein a control group and an experimental group were employed. Non-equivalent control group design was used in the present study. During the experimental study the investigator conducted a pre- test in the beginning and a post- test at the end of the treatment.

## Analysis and Interpretation

The analysis and interpretation carried out with respect to Critical Thinking ability in Social Studies of students in the Experimental and Control Groups are as follows:

### H<sub>01</sub>: There is no significant difference in the post-test scores on critical thinking ability in social studies of experimental and control group students

The difference between the mean scores of the two groups was tested for significance by finding the critical ratio. The data and results of the test of significance are given in the table below.

**Table 1**  
**Data and results of test of significance of post- test scores in Critical thinking in social studies in the Experimental and Control groups**

Groups	No. of students	Mean	Standard deviation	T	Level of significance
Experimental group	39	35.49	10.84	2.19	Significant at 0.05 level
Control group	39	30.11	10.84		

The mean scores of the experimental group (35.48) is greater than that of the control group (30.10). The critical ratio obtained is 2.19, which is significant at 0.05 levels. Hence the null hypothesis stating that there is no significant difference in the post-test scores of experimental and control group on critical thinking ability is rejected and the alternative hypothesis stating that there is a significant difference in the post-test scores of experimental and control group on critical thinking ability is upheld. Since the mean of experimental group is greater than that of the control group, it is inferred that experimental group was greater score in critical thinking better than the control group

### H<sub>02</sub>: There is no significance difference in gain scores in Critical thinking in social studies of Experimental and Control group students

The performance of students in both the groups were compared by testing the significance of the difference between the mean of the gain scores in Critical thinking in social studies of the two groups. For this the critical ratio is found out and tested for significance. The data and results of the test of significance are given in the following table.

**Table 2**  
**Data and results of test of significance of the gain scores in Critical thinking in social science of pupils in the Experimental and Control groups**

Groups	No. of pupils	Mean	Standard deviation	T	Level of significance
Experimental group	39	5.74	3.27	4.79	Significant at 0.01 level
Control group	39	2.62	2.42		

The mean gain scores of the experimental group (5.74) were greater than that of the control group (2.61). The obtained critical ratio is 4.79 which were highly significant even at 0.01 level. Since the mean gain of experimental group is greater than that of the control group, it is inferred that experimental group is better in critical thinking than the control group.

**H<sub>03</sub>: There is no significance difference between the pretest and post-test scores on Critical thinking in social studies of Experimental group students**

The difference between the mean scores pretest and post- test of the two groups was tested for significance by finding the critical ratio. The data and results of the test of significance are given in the table below.

**Table 3**  
**Data and results of test of significance of pretest and post- test scores in Critical thinking in social studies in the Experimental group**

		Mean	N	Std. Deviation	T	Level of significance
Pair 1	critical thinking pretest	29.74	39	11.104	10.95	0.01
	critical thinking posttest	35.49	39	10.841		

The mean scores of the experimental group (35.49) was greater than that of the control group (29.74). The critical ratio obtained is 10.95, which is significant at 0.01 levels. Hence, the null hypothesis stating that there is no significant difference between pre- and post-test performance of experimental group students on critical thinking ability is rejected and the alternative hypothesis stating that there is a significant difference between pre- and post-test performance of experimental group students on critical thinking ability is upheld. Since the mean of post test score is greater than that of the pretest, it is inferred that after the experiment students are well in critical thinking ability.

**H<sub>04</sub>: There is no significance difference between the dimension wise analysis of pre- and post-test scores on critical thinking ability in social studies of experimental group students.**

**Table 4**  
**Data and results of paired sample t test of significance of the pretest and posttest scores components of Critical thinking in social science of pupils in the Experimental groups**

		Mean	N	Std. Deviation	t
Interpretation	Pretest	4.92	39	1.855	5.48
	Posttest	6.03	39	1.755	
Analysis	Pretest	4.33	39	2.017	6.19
	Posttest	5.41	39	1.802	
Evaluation	Pretest	5.18	39	2.199	3.41
	Posttest	6.03	39	1.926	
Inference	Pretest	6.92	39	3.199	4.42
	Posttest	8.18	39	3.025	
Explanation	Pretest	4.74	39	1.846	4.61
	Posttest	5.46	39	1.862	
Self-Regulation	Pretest	3.69	39	1.559	3.91
	Posttest	4.41	39	1.272	

Only by analyzing the pre- test scores, post- test scores, gain scores and by finding out critical ratio it cannot be concluded that the two groups may or may not differ significantly in their performance after the conduction of the experiment. Also the investigator selected two intact class room groups without considering any variables like sex, age, socio economic status etc. So it is necessary to analyze the data using the statistical technique 'Analysis of covariance'(ANCOVA).

**H<sub>05</sub>: There is no significant difference in the post-test scores on critical thinking ability of experimental and control group students when pre-test score on critical thinking ability were taken as covariates**

For arriving at valid and reliable conclusions the investigator adopted the statistical technique ANCOVA. This analysis was made to compare the effectiveness of Critical Pedagogical Approach in social studies with the traditional method in social studies at secondary level. This was made with respect to the scores obtained for the critical thinking as a whole. The pre- test and post- test scores of the control and experimental groups were subjected to ANCOVA to determine the effectiveness of Critical Pedagogical Approach on Critical thinking in social studies over traditional Method of teaching. The summary of analysis of variance of pre- test(x) and post- test(y) scores taken separately is given in the following table.

**Table 5**  
**Summary of analysis of variance of pre- test(x) and post- test(y) scores in Critical thinking in social studies of the Experimental and Control groups, taken separately.**

Sources of variation	Df	SS <sub>x</sub>	SS <sub>y</sub>	MS <sub>x</sub> (V <sub>x</sub> )	MS <sub>y</sub> (V <sub>y</sub> )
Among means	<b>1.00</b>	<b>99.28</b>	<b>565.4</b>	<b>99.28</b>	<b>565.38</b>
Within groups	<b>76.00</b>	<b>9839.18</b>	<b>8929.3</b>	<b>129.46</b>	<b>117.49</b>
Total	<b>77.00</b>	<b>9938.46</b>	<b>9494.7</b>	-	-

$$F_x = 99.28/129.46 = .77$$

$$F_y = 565.38/117.49 = 4.81$$

From the table F, for df 1/76

F at 0.05 level = 3.98

F at 0.01 level = 7.01

The obtained  $F_x$  and  $F_y$  ratios were tested for significance. The table value of F ratio for df 1/76 is 3.98 at 0.05 level. So the obtained  $F_x$  is not significant at 0.05 level ( $F_x = 0.77$ ;  $p > 0.05$ ). Since the F test applied to the pre- test scores  $F_x$  falls for short of significance at 0.05 level, it is clear that the x means do not differ significantly.

The table value of F ratio for df 1/76 is 7.01 at 0.01 level. So the obtained  $F_y$  is not significant at 0.01 level ( $F_y = 4.81$ ;  $p > 0.05$ ). Since the  $F_y$  falls beyond the 0.05 level of significance, it can be tentatively interpreted that there was no significant difference between the y means of the two groups. The final y scores were adjusted for differences in initial x scores. For that  $SS_y$  has been adjusted for any variability in y and  $SS_{y.x}$ , and F ratio,  $F_{y.x}$  were calculated. The summary of analysis of covariance of pre- test and post- test scores of pupils in experimental and control groups is given in the following table.

**Table 5.1**  
**Summary of analysis of covariance of pre- test and post- test scores in critical thinking in social studies of students in the Experimental and Control groups.**

Sources of variation	Df	SS <sub>x</sub>	SS <sub>y</sub>	SS <sub>x,y</sub>	SS <sub>y,x</sub>	MS <sub>y,x</sub> (V <sub>y,x</sub> )	Sd <sub>y,x</sub>
Among means	1.00	99.28	565.4	236.92	210.85	210.85	2.76
Within groups	75.00	9839.18	8929.3	9068.92	570.37	7.60	
Total	76.00	9938.46	9494.7	9305.85	781.22		

$$F_{yx} = 210.85/7.60 = 27.73$$

From the table F, for df 1/75

F at 0.05 level = 3.98

F at 0.01 level = 7.01

The obtained  $F_{y,x}$  ratio was tested for significance. Since the table value of F ratio for df 1/75 is 7.01 at 0.01 level the obtained  $F_{y,x}$  ratio is highly significant even at 0.01 level ( $F_{y,x} = 27.73$ ;  $p < 0.01$ ). It is clear from the significant  $F_{y,x}$  ratio that the two final means which depend upon the experimental and control variables differ significantly after they have been adjusted for initial difference on x. The adjusted means of post- test scores (x,y means) of students in the experimental and control groups were calculated. The difference between the adjusted y means was tested for significance. The data for adjusted y means of post- test scores of students in experimental and control groups are given in the following table.

**Table 5.2**  
**Data for adjusted means of post- test scores in critical thinking in social studies in the Experimental and Control groups**

Groups	N	M <sub>x</sub>	M <sub>y</sub>	M <sub>y,x</sub> (adjusted)
Experimental	39.00	29.74	35.5	34.45
Control	39.00	27.49	30.1	31.14
General means	78.00	28.62	32.79	-

$$SE_m \text{ between two adjusted means} = 0.62$$

$$t \text{ value} = 34.45 - 31.14 / 0.62 = 5.29$$

From the t table, for df = 76

t at 0.05 level = 2.00

t at 0.01 level = 2.66

Adjusted y means for pre- test scores are tested for significance for df 1/76. The obtained t value is 5.29 and the table value for significant difference for df 76 is 2.66 at 0.01 level ( $t = 5.29$ ;  $p < 0.01$ ). The significant difference between the adjusted y means indicates that the students of the experimental and control groups differ significantly in their achievement in the post- test. So the mean of the post- test scores of experimental and control groups clearly show that the experimental group is superior in the critical thinking in social studies. Hence the null hypothesis stating that there is no significant difference in critical thinking ability of experimental and control group when pre-test on critical thinking ability were taken as covariates is rejected, and the alternative hypothesis i.e. there is a significant difference in critical thinking ability of experimental and control group when pre-test on critical thinking ability were taken as covariates is upheld. It may therefore be tentatively interpreted that the critical thinking in social studies of students taught through Critical Pedagogical Approach is better than those of students taught through traditional method of teaching in social studies.

## CONCLUSION

Social studies are generally conceived as a hard core and a boring subject mainly due to the rigid ways of presenting the subject matter. Using critical pedagogy can transform learner's thinking abilities and make them more critical and analytical towards the issues and problems in the society. It is found that critical pedagogical approach is more effective than the traditional method of teaching to foster critical thinking ability in social studies. So this approach can be practiced in the schools to facilitate meaningful learning among the students and their society and finally this study highlights the shift from teacher centered to learner-centered classroom wherein the students are given freedom to explore and discover things on their own. This approach could really be very useful to the teachers in creating transformative/ constructive classroom situations wherein the students are critically conscious about their role in the society and act as social transformers in the society.

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