

Experimental study Constructivis Learning strategies and its effect on Academic Achievement Study on in Social Science among the Secondary school students

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Introduction:

Learning possesses a significant spot in the school, as it comprises of change of responses because of experience/practice, competencies that are to be attained by a learner. Social Science competency has become essential task for every student. Without social science one cannot imagine their day today life. There is no doubt in that the attitude towards Social Science formed at secondary level lays foundation for future specialisation studies.

The study of Social Science plays an important role in the growth and development of individual and society, to fulfil certain human needs, desires, or any activity of verbal, written or any form of communication a person uses.

The main goal of Social Science education in schools is to develop thinking, clarity of thoughts and pursuing assumptions to logical conclusions is central to the social science enterprises. Many ways of thinking and the kind of thinking in Social Science is an ability to handle attractions and is an approach of problem solving.

Operational Definition:

- **5 "E" learning:** The 5 "E" is an instructional model dependent on the constructivist way to deal with realizing which says that students manufacture or build new thoughts on head of their old thoughts. The 5 "E" learning cycle includes 5 stages that are Engage, Explore, Explain, Expand and Evaluate.
- **Effectiveness:** In the present study, effectiveness refers to the performance of the students by the influence of cooperative, collaborating and 5 "E" learning techniques. This is the capacity of delivering wanted outcome when something is regarded successful. It implies it has a planned or expected result or delivers a profound clear impression.
- **Social Science:** Social Science is one of the coresubjects taught at school level. In this study, 1 unit each of History, Geography and Political science from social science syllabus of Karnataka state government were selected for treatment. Video study It is a subject which concentrate on the content of societal information and how the branches of history, geography political science, economics, business studies and Commerce.
- **Secondary level:** The pattern after 10 years of school education in Karnataka state is 4+3+3. The first seven years is primary are elementary level the last 3 years of school age is secondary level for the present study, 9th standard of the secondary level was taken for experimentation.
- **Academic Achievement:** In the present study, scores obtained by the students in the achievement test in Social Science. The
- **Cooperative learning:** Cooperative learning is defined as "students working together to attain groups goals that can't be obtained by working alone or competitively" - Johnson, Johnson and Holbeck, 1986.
- **Collaborative learning:** Collaborative learning is defined as- Teaching learning process designed to bring out the best from the learner by allowing them to learn from each other in a democratic situation.

achievement comprises knowledge constructed by students and their understanding of the constructed knowledge with respect to the three topics.

Review Of Literature

- Duxbury, John. D and Tsai, Ling-Ling (2010) conducted a study on the effect of Cooperative Learning on Foreign Language Anxiety: A Comparative Study of Taiwanese and American Universities. It was a Survey Research. The example for the examination comprised of total 385 understudies of which 152 were from one American University and 233 from three Taiwanese Universities. To find the connection between understudies' foreign language Classroom anxiety and cooperative learning attitudes and the relationship between student's foreign language Classroom tension and their view of the utilization of Cooperative learning rehearses.
- Johnson et al. (2000) extensively reviewed the Research report on the effectiveness of Cooperative learning methods found 164 studies investigating 8 types of Cooperative learning methods. Cooperative methods had a significant positive impact on student achievement. When the impact of Cooperative learning was compared with competitive and individual state learning. Learning together Cooperative technique promoted the greatest effect.
- PallaviKaul (2010) investigated "The effect of learning together techniques of Cooperative learning method on students' achievement in mathematics." The sample consisted of 70 seventh-grade pupils of NS. Public School, Noida in Uttar Pradesh. Experiment and control groups were randomly assigned as 7A, and 7B class. The groups were equated by giving pretest and post tests were given after the treatment of learning together technique. It was seen that learning together Technique of the Cooperative Learning strategy is more powerful than Traditional strategy in Mathematics instructing of elementary school of 7th grade.
- Hennessey (1999) brings up those Collective methodologies advance metacognitive talk among understudies and invigorate psychological clash. Such clash can prompt explanations of understudies' convictions and ideas.
- Gooden-Jones (1996) chosen 10 settler volunteer understudies from all junior college in New York City. The understudies were shown the synergistic learning procedure for about a month and a half. The scientist found that 80% of the understudies had breezed through the composed accomplishment assessment (WAT) controlled by the school. An investigation of the understudies' papers demonstrated that the Collaborative learning system had prompted an improvement in their composing abilities.
- Akcay (2013) structured a nonexistent creepy crawly model to help the fourth-grade understudies to recognize fundamental bug highlights as a method for advancing understudy inventiveness. The 5Es (Engage, Explore, Explain, extend [or Elaborate], and Evaluate) learning cycle instructing model is utilized. The 5Es methodology permits understudies to work in little gatherings. It offers understudies a chance to contemplate various creepy crawlies as they exhibit their imagination in building up a unique bug model.
- Hanuscin, Garderen, Hill & Presley (2013) on their examination confirm for the ideal effect of the expert advancement program on instructors' understanding and capacity to apply the 5E Learning Cycle to K6 science. The discoveries of the investigation are noteworthy, even though the test is led for generally brief length.
- Kinqir & Akqemer (2013) directed an examination named "Using the Learning Cycle Method to Improve College Students' Understanding on Gases Concepts". The understudies claimed that the activities based on 5E Learning Cycle Model helped

them to learn the gaseous concepts deeply. Thus, 5E learning cycle instruction was found effective on understanding the gaseous concept among college students and helped in the development of favourable attitudes toward chemistry.

Study Objectives:

- In The present study trying to verify the effectiveness of co-operative, Collaborative then 5 "E" learning techniques based on constructivist instructional strategies for teaching social science at secondary level

Design Of The Experiment

The present study focused on develop and check the impact of the Cooperative, Collaborative and 5"E" learning techniques based on constructivism and achievement of secondary level students in social science. That is to make comparative study of the effectiveness of cooperative, Collaborative and 5 "E" Learning techniques. This study requires an experimental design of two experimental groups and a control group.

Selection Of The Sample

- Population of the experiment covers the students at private unaided English medium secondary level schools of Karnataka state. Where the Karnataka state syllabus was followed. For experimentation, the researcher selected secondary level schools in Bangalore city [urban South District].

Methodology

- Descriptive statistics (mean, median, standard deviation, and correlation coefficient; skewness and kurtosis)
- Analysis of Co-variance

Hypothesis

Here exists not any considerable disparity among means of total accomplishment scores related to learners who learnt through Cooperative learning, Collaborative and 5 "E" Learning technique with this main hypothesis below sub hypothesis was created and in this paper analysed it also.

1. Here exists not any considerable variation among means of total learner’s achievement scores, who have learnt through Cooperative learning and 5 "E" learning techniques.

2. Here exists not any considerable variation among means of total learner’s achievement score, who have learnt through Collaborative and 5 "E" leaning technique.
3. Here exists not any considerable variation among means of total learner’s achievement scores, who have learnt through Cooperative and Collaborative learning.

Analysis Of Hypothesis

Descriptive analysis of knowledge level achievement scores - Means and standard deviation of the knowledge level achievement scores were computed for each group and gender wise subgroups. Descriptive Statistics is presented in the below table 1

Table 1
Means and standard deviations of the three groups and gender-wise sub-groups of knowledge level achievement scores

Sample	Statistics	G1	G2	G3
Total	N	31	34	37
	Mean	20.19	27.94	17.22
	S. D	6.534	5.657	4.029
Boys	N	13	18	19
	Mean	16.08	27.22	19.11
	S. D	5.914	6.198	4.108
Girls	N	18	16	18
	Mean	23.17	28.75	15.22
	S.D	5.057	5.053	2.881

Two-way factorial ANCOVA was carried out with learning Strategies and gender as fixed factor and talking intelligence, as covariate. This analysis was done to examine whether significant differences exist between the main achievement score at 0.05 of significance. Since the procedure adopted was analysis of covariance, Leven's test of equality of error variance was applied to the data on total achievement scores of the groups G1 G2 and G3, in order to check the assumption of variance homogeneity, the competition yielded F=2.105 (df 5,96) at 0.0 level of significance, indicating that 'F' is not significant. Hence the assumption of variance homogeneity was fulfilled. Summary of two-way analysis of covariance used to study the effectiveness of techniques based on constructivism is presented in the table 2.

Table 2

Two-way ANCOVA for total achievement scores of total samples when intelligence scores are taken as covariate

S. V	S.S	d f	MS	f-value	Significance
Learning Technique	7114.65	2	3557.33	67.183**	0.000
Gender	181.00	1	181.00	3.418	0.068
Intelligence	955.20	1	955.20	18.04*	0.000

Abbreviation :SV – Source of Variation, SS – Sum of Square, MS – Mean Squares

** Sig. at 0.01 level.

As Of chart 2This One remains evident f-value for main effects of learning techniques (67.183) and intelligence (18.0 4) are significant at 0.01 level of significance. It is noted that the values for gender (3.418) is not significant both at 0.01 and 0.05 levels.

Based on the results presented in the table 1 further two-way ANCOVA was modified by removing the variable gender which was not significant. Intelligence was retained as covariates in the model.

Summary of the modified two-way ANCOVA used to study the effectiveness of learning techniques is presented in the table 3

Table 3

Two-way ANCOVA for total achievement scores of total samples when intelligence scores are taken as covariate

SV	SS	d f	Ms	f-value	Significance
Learning Technique	81.79.839	2	4089.420	75.899**	0.000
Intelligence	1091.050	1	1091.050	20.250**	0.000

Abbreviation: SV – Source of Variation, SS – Sum of Square, MS – Mean Squares

** Sig. at 0.01 level

It is evident since table top 3 that the f value for learning strategies remainsnoteworthyon 0.01suggeststhe statistical a significant distinction among Criterion means for the three group exist even after adjustment is made for the linear effect of the covariate intelligence score.

Therefore, the invalid theory one was dismissed, and elective speculation was acknowledged. There is noteworthy contrast between the means total achievement scores of students who have learnt through Cooperative and 5 'E'.

Post-hoc comparison

Further analysis was taken up to determine which of the two groups based on learning techniques because variation in the Criterion means. That is to find the groups which differ significantly regarding total achievement scores. Post-hoc comparison was made with adjusted Criterion means using Bonferroni test of multiple comparison. Adjusted means for each group and total and the result of Bonferroni's test of Post-hoc comparison is presented in table 4

Table 4

Result of Bonferroni test of post-hoc comparison between adjusted means of total achievement scores of total samples.

Groups compared	Adjusted means	Adjusted mean difference	S. E	Significance	95% of confidence Interval	
					Lower bound	Upper bound
G1 – G3	G 1 27.797	3.860	1.772	0.096	0.460	8.181
	G 3 23.936					
G2 – G3	G 2 44.882	20.946**	1.729**	0.000	16.732	25.159
	G 3 23.936					
G1 – G2	G 1 27.797	17.086**	17.086**	0.000	21.463	12.708
	G 2 44.882					

** Sig. @ 0.01 level.

From the table 3 it is evident that the adjust admin difference for G1 and G3 is not significant at 0.05 level of significance. Consequently, the invalid theory 1A was acknowledged. It very well may be reasoned that there exists no critical contrast between the methods for complete accomplishment scores of understudies who learn in Pro Cooperative learning and 5 'E'.

The adjust admin differences of G2 & G3 and G1 & G2 are significant at 0.01 level of significance. Hence the null hypothesis 1B and 1C are dismissed and elective theory are acknowledged.

There exists huge contrast between the methods fortotal achievement scores of students who have learnt through Collaborative and 5 'E' and Cooperative and Collaborative learning. Since the higher adjusted mean is associated with group 2 it can be concluded that Collaborative is more effective than Cooperative and 5 'E'.

Implications

The results of the present study collaborate with the recommendations made by the NCF-2005 that constructivist theory of learning should be the base for pedagogy of Social Science education at school level. The findings of the study confirm that instructional strategy based on constructivist theory of learning are more effective than traditional learning theories. Hence, instructional strategies based on constructivism should form an integral part of methodology used for teaching Social Science at secondary level.

Conclusion

Finally, the researcher concludes with a found hope that the present study provided on empirical evidence to collaborate the recommendations made by the NCF for school education, regarding the constructivist methodology for school education and help the present system of social science education of secondary level shift from traditional instructional process to constructivist instructional process, with ease.

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