

Effectiveness of Brain Based Learning Strategy for Enhancing Creativity among IX Standard Pupils

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Abstract

The purpose of this study was to find out the effectiveness of Brain Based Learning Strategy for enhancing Creativity among IX standard pupils. The present study is quasi experimental in nature with pre-test post test nonequivalent group design. Total of 50 subjects were selected by purposive sampling and divided into two groups (n = 25) and controls (n = 25) groups from a Government Aided school in Coimbatore. Both groups were measured and compared at the end of the sessions. It can be concluded from the present study that Brain-Based Learning strategy is more effective in the experimental group and had higher scores than the conventional method after analyzing and measuring t-test as the statistical measurement. It seems that using Brain Based Learning Strategy improves and enhances the creativity of secondary school students.

Key words - Brain research, Brain Based Learning Strategy, Creativity

Introduction

We are in the 21st century but our education system is still struggling to apply these brain researches to human learning in the classroom. Hence, first one should understand how the human brain learns, the results of brain researches on learning principles and the strategies to implement these brain researches in the classroom. A traditional classroom teacher teaches them

without materials that could evoke interest in them. So constructive and creative ensuring classroom is possible through Brain-Based Learning. When effective teaching strategies are used, students are being taught to their preferred learning styles, teachers are confident in their methods and abilities, and the overall school climate is improved (**Ramakrishnan and Annakodi, 2013**). As **Aparna & Smita (2014)** have reported impressive results from utilizing Brain-Based Learning to foster student creativity. Brain-Based Learning has resulted from the educators and researchers applying the findings of brain-research to better teaching practises and fosters creativity.

Variables

The variables of the present study are presented below:-

Dependent Variable: Creativity

Independent Variable: Brain Based Learning Strategy.

Objectives of the Study

The present study had the following objectives: The major objective of the present study is to find out the Effectiveness of Brain Based Learning Strategy for enhancing Creativity among IX standard pupils of Coimbatore.

The sub objectives are:

- To study the effectiveness of Brain Based Learning Strategy for enhancing creativity among IX standard pupils.
- To study the level of 'Acquisition of Creativity' by applying Brain Based Learning Strategy among IX standard pupils with regard to gender.

Hypotheses:

- There is no significant effect of Brain Based Learning Strategy for enhancing Creativity among IX standard pupils.
- There is no significant difference in the 'Acquisition level of Creativity' by applying Brain Based Learning Strategy among IX standard pupils with regard to gender.

Methodology

The methodology adopted for the present study is quasi experimental in nature. Here, the investigator adopts pre-test post test nonequivalent group design.

Sample

The investigator used purposive sampling for selection of samples. The investigator selected two IX grade classes from a Government Aided School in Coimbatore. Of which, 25 pupils were set apart as experimental group and another 25 pupils were set apart as control group for the study. Prior to the introduction of the experiment, the investigator administered a test of Creativity and their mean scores were compared. By this the investigator got evidences of equivalence in Creativity. After the test, the investigator applied Brain Based Learning Strategy.

Tool

The following tool was used in the study: Test of Creativity (Prepared and standardised by the investigator).

Results and Discussion

The preliminary analysis of data collected by using Test of Creativity is as follows.

TABLE 1 Preliminary Analysis of the Pre-test and Post test Scores on Test of creativity of the Experimental Group and control group

Groups	Test	N	Mean	Median	Mode	SD	Skewness	Kurtosis
Experimental group	Pre	25	54.84	53	45	9.54	0.26	-1.18
	Post	25	73.92	73	73	10.6	-0.09	-0.58
Experimental group	Pre	25	51.68	52	43	9.12	0.12	-0.77
	Post	25	55.84	55	62	8.16	0.03	-0.53

Mean, median, mode of the distribution of the pre-test scores of the experimental group on Test of Creativity is 54.84, 53, and 45 respectively. The standard deviation of the distribution is 9.54. The skewness is 0.26 and kurtosis is -1.18. Mean, median, mode of the distribution of the post-test scores of the experimental group on Test of Creativity is 73.92, 73 and 73 respectively. The standard deviation of the distribution is 10.6. The skewness is -0.09 and kurtosis is -0.58. This shows that the distribution is almost normal.

Mean, median, mode of the distribution of the pre-test scores of the control group on Test of Creativity is 51.68, 52, and 43 respectively. The standard deviation of the distribution is 9.12. The skewness is 0.12 and kurtosis is -0.77. Mean, median, mode of the distribution of the post-test scores of the control group on Test of Creativity is 55.84, 55 and 62 respectively. The standard deviation of the distribution is 8.16. The skewness is 0.03 and kurtosis is -0.53. This shows that the distribution is almost normal.

Statistical Analysis with regard to Test of Creativity

Comparison of mean pre tests scores of experimental and control group.

Before starting the experiment a test of creativity was administered as pre test to both experimental and control groups. The scores obtained were compared and the data thus obtained were analyzed by computing the mean and standard deviation and subjected to test of significance of difference between the two means.

TABLE: 1 Test of significance of the difference between mean pre test scores of the experimental and control group

Group	N	Mean	SD	T
Experimental group	25	52.84	9.14	1.197 ^{NS}
Control group	25	49.6	9.12	

NS - Not Significant

The table 1 reveals that the pre-test scores on creativity of the experimental group (M= 52.84) and that for control group (M= 49.6). The t-ratio obtained (t=1.197) which is less than the table value at 0.05 significance level. Hence it is not significant. This means that there is no significant difference between the pre test scores of experimental and control groups. Thus, proving the samples in the control group and experimental group are equal.

Comparison of mean post-test scores of experimental and control group.

The investigator attempted to compare the post test scores of the experimental and control group on the creativity of IX standard students by implementing Brain Based Learning Strategy. The scores of post tests of the experimental and control group were analyzed by computing the mean and standard deviation and subjected to test the significance of difference between two means.

TABLE: 2 Test of significance of difference between mean post test scores of the experimental group and control Group

Group	N	Mean	SD	T
Experimental group	25	71.64	9.66	6.76*
Control group	25	54.68	7.32	

* Significant at 0.05 level

The mean post-test scores on creativity for experimental group (M= 71.64) and that for control group (M= 54.68). The t-ratio obtained (t= 6.76) which is greater than the table value. Hence it is significant at 0.05 level and the null

hypothesis was rejected. The difference in the mean creativity scores indicates the effectiveness of the intervention. That means Brain Based Learning Strategy have a significant effect on creativity of IX standard students.

Comparison of pre test and post test scores of creativity of experimental and control group

The investigator attempted to compare the pre test and post test scores of the experimental group and control group in order to find out the effectiveness of Brain Based Learning Strategy for enhancing creativity of IX standard students.

A pre test was administered before the treatment. Brain Based Learning Strategy was implemented in the experimental group. After the treatment a post test was administered. The scores of the pre test and post test were analyzed by computing the mean and standard deviation and subjected to test the significance of difference between the scores.

TABLE: 3 Test of significance of the difference between mean pre test and post test scores of the experimental group

Group	Pre-test			Post-test		't' value
	No.	Mean	S.D	Mean	S.D	
Experimental group	25	54.84	9.54	73.92	10.6	6.69*
Control group	25	51.68	9.12	55.84	8.16	1.70 ^{NS}

*Significant at 0.05 level NS -Not Significant

The obtained 't' value is 6.69, which is greater than the table value at 0.05 significance level. This shows that there is significant difference between the mean scores of the pre test and post test of the experimental group in the creativity. Whereas in the control group the obtained 't' value is 1.70, which is less than the table value at 0.05 significance level. This shows that there is no significant difference between the mean scores of the pre test and post test of the control group in the creativity. That means Brain Based Learning Strategy have significant influence for enhancing creativity of IX standard students.

Comparison of mean post test scores of experimental group and control group with regard to gender.

The investigator attempted to compare the post test scores of the boys and girls in the experimental group and control group.

TABLE 4 Test of significance of difference between the post test scores of boys and girls in the experimental group and control group

Group	Variable	N	Mean	SD	T
Experimental group	Boys	12	69.83	9.67	1.96*
	Girls	13	77.69	10.29	
Control group	Boys	12	52.83	6.82	1.88 ^{NS}

	Girls	13	58.62	8.55	
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***Significant at 0.05 level NS -Not Significant**

The calculated 't' value 1.96 is same as the table value at 0.05 significance level. That means there is significant difference between the mean post test scores of boys and girls in the experimental group. Whereas in the control group, the 't' value is 1.88 which is less than table value at 0.05 significance level. That means there is no significant difference between the mean post test scores of boys and girls in the control group.

Major Findings of the Study

The Data, the investigator collected using the Test of creativity revealed that Brain Based Learning Strategy has considerable effect upon the IX standard students.

- There is no significant difference in the pre test mean scores of the experimental and control group. That means the samples in the control group and experimental group are equal.
- There is great difference in the post test mean scores of the experimental and control group.
- There is significant difference between the mean scores of the pre test and post test of the experimental group in the creativity. Whereas in the control group no significant difference is noted between the mean scores of the pre test and post test.
- There is significant difference between the mean post test scores of boys and girls in the experimental group whereas no significant difference is noted between the mean post test scores of boys and girls in the experimental group and control group with regard to gender.

Conclusion

The creativity of the learners can be fostered by the development of right environment to be innovative and creative. For the success of teaching, the teachers have to be equipped with the innovative materials and strategies keeping in mind the physiology and the working of the brain cannot be denied. This research study suggests a promising approach which can bring very constructive changes and creates brain friendly learners who can take up the challenges of the future generation whereby the creativity is ensured making life more fun and interesting.

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