

Effect of Classical Brainstorming Technique on the development of Creativity amongst STD VIII Science students.

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Abstract: Science concentrates the entire universe in a small room these days. It shows the complete interdependence of man on science. If science is all that important and inescapable it is necessary to put its teaching on a sound basis. Our education system hardly plunders what justifies highest academic honors. This Paper mainly focuses on student in 21st Century who requires creative skills. Uniqueness is very often used in creativity studies. In studies of creativity, creative techniques influences and are commonly assessed by using climate measures and achievements. In the present effort, analysis was conducted on the basis of differences in pre post test and performance of students in test. Findings of the study shows that conducive environment, motivation and support system is important for giving better outputs and joyful learning which helps pupils to think differently, imagine and also enhances flexibility fluency of thoughts which also helps in preparation of novel project.

1. INTRODUCTION:

The practical subjects such as science are taught only by reading the textbooks. Without obtaining first-hand experiences. The students are not allowed to perform the experiments. Moreover, in some schools there are no laboratories, and, in some schools, there are laboratories but without sufficient experimental equipment's. This adversely effects on the natural abilities of students such as self-search problem solving. Thus, adversely results on the development of scientific attitude of the students. Our education system rarely plunders what rates highest academic honours. Deviation is dejected. Risk taking is taunted. Weightage should be given to original work and the marking system should be rethink and built on to recognize the problem solving research, original work and creativity and if changes is done in methodologies, we can see transformation in our Indian education system. In our education system what is required is Originality rather than memorisation. The whole system of Indian Education revolves round the academic achievement of student's through various other outcomes. Achievement of students studying in secondary education institutions is a major concern. High achievement builds self-esteem, self-confidence and strengthens self-efficiency and this belief leads to better adjustment with the groups and good academic record to certain extent which predicts the future of the learner.

1.1. Creativity as process:

Understanding the process of thinking is understood by different Psychologist who are process oriented which pointer to the process of creativity Development of thinking is possible if process of Creativity is understood. Rogers (1954, 1959) defined the creative process "as the emergence in action of a novel interactive product, growing out of the uniqueness of the individual on the one hand, and the constituents, procedures, people of situations of his life on the other".

1.2. Creative Environment:

Creative Environment is considered as the interaction between persons and their environment. Creative places or environments include areas, grounds and framework. Environment also motivates individuals working within that field.(Amabile, 1983).

2. SIGNIFICANCE:

Classroom atmosphere plays a vital role in refining creativity and self-reliance in students. Teachers can make classroom environment where each student's opinion matters a lot to give exposure to the students and involving them in activities means to give push to them for creativity. Inspiration for innovation and creating various chances to resolve issues which helps in novelty. Arouse preparedness in the students to try new ideas, active learning includes use of creative methods like games, concepts, maps and study materials. Different school boards these days have been working towards changing their existing curriculum to provide such kind of opportunities to students which will help them to explore their inner potentials. This all is being planned with the intention of making students more creative and innovative ones. As present syllabus makes children not the divergent thinkers but only convergent thinkers. Therefore, this study helps to understand the school environment conducive to promote creativity among Std VIII students and to find out if there is any correlation between achievement and creativity. In this background the present research is a humble attempt to prepare a training programme(Classical Brainstorming Module) for Std VIII science students of SSC

Board to develop Creativity and study its effectiveness. The researcher feels if root causes of the problem can be identify by a systematic study and research it could be possible to suggest meaningful and effective solution.

3. THEORETICAL FRAMEWORK:

A former student of Bloom, Loran Anderson, led a new assembly which met for the purpose of updating the taxonomy in 1990 expecting to add significance for 21st century, students and teachers. The revision comprises numerous apparently slight yet actually quite important variations. It is called **Revised blooms Taxonomy by Anderson and Krathwohl**. The original number of categories that is six were retained but important changes were done in it. new name were given to three categories, two categories was exchanged. The verb aspect of the original Knowledge category was kept as the first of the six major categories, but was renamed Remember. Comprehension was renamed because one criterion for selecting category labels was to terms that teachers use in talking about their. So, Comprehension, the second of the original categories, was renamed Understand. Application, Analysis, and valuation were retained, but in their verb forms as Apply, Analyze, and Evaluate. Synthesis changed places with Evaluation and was renamed Create. All the original subcategories were replaced with gerunds, and called "cognitive processes." Whereas the six major categories were given far more attention than the subcategories in the original Taxonomy. Like the original Taxonomy, the revision is a hierarchy in the sense that the six major categories of the Cognitive Process dimension are believed to differ in their complexity, with Remember being less complex than Understand, which, is less complex than Apply, and create is added to it which is very important in 21st Century.

Classical brainstorming is based on two principles:

- Deferred judgment
- Quantity breeds quality

Four practical rules under this two Principles are

- No criticism
- Freewheel
- Go for quantity
- Hitch-hike

In its classical form, the procedure followed in stepwise manner.

1. Problem-statement is developed before the meeting.

2. Students receive a note giving the background to the problem, a problem statement, how the session will run and the four brainstorming rules.

3 set up of room is done suitably. The recorder fixes a good supply of pre-numbered blank sheets of flip-chart paper.

4. The session starts with warming up and related instructions.

5. A new set of recording sheets has been prepared by recorder. The problem-statement is displayed prominently with a brief question time for clarification.

6. Participants call out ideas as they occur to them, and the recorder writes them down.

7. Terminate the process when the idea flow begins to run dry – it should certainly not exceed 30–40 minutes.

8. in this activity collection, sorting and separating of ideas need to be done, here participants need to be given timely instructions and also expertise recorder as well as facilitator need to be expert in handling the technique.

4. OBJECTIVE OF THE STUDY:

To study the effectiveness of Training programme on development of creativity among Std VIII Science students.

4.1. HYPOTHESIS OF THE STUDY:

There is no significant difference in creativity between control and experimental groups among Std VIII science students.

5. METHODOLOGY OF THE STUDY:

The present study is a True Experimental Design. The Sampling technique used for present study is simple random sampling technique. The investigator selected 114 students of Std VIII from the SSC Board schools.

5.1. TOOLS OF RESEARCH:

Development of Training module designed on Classical brainstorming. Self made questionnaire i.e. Achievement test.

6. ANALYSIS OF DATA:

Following techniques of analysis were employed.

Descriptive

Mean, Median, Standard Deviation

t - test

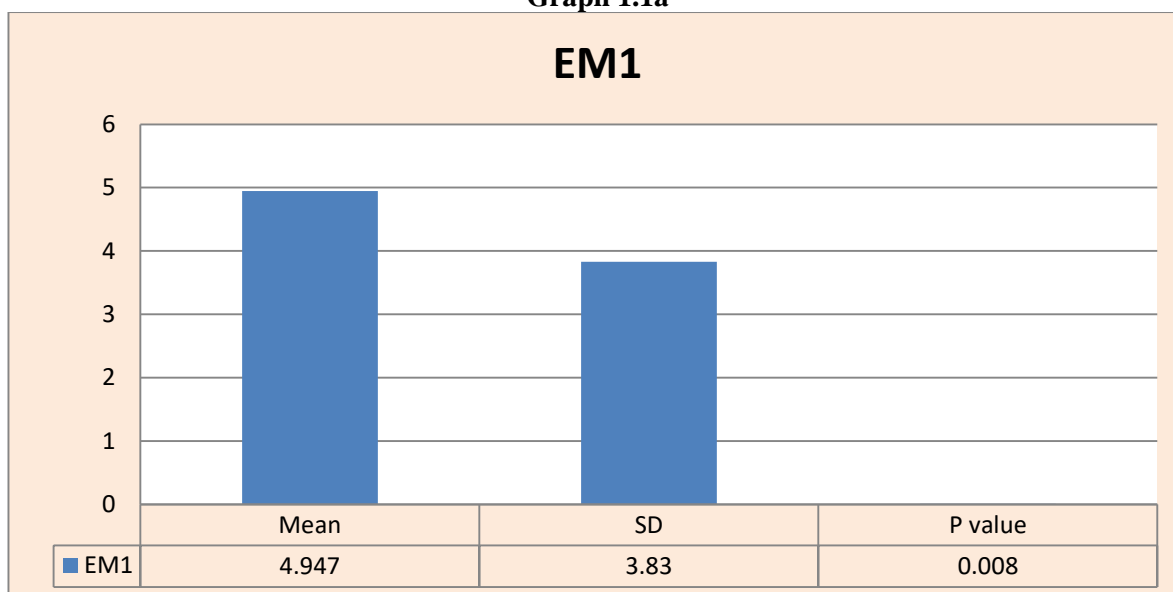
Coefficient of Correlation

6.1. Hypothesis: Null Hypothesis: There is no significant difference in pre-achievement scores of topic M1 and post-achievement scores of topic M1 of Experimental group among Std VIII science students. Alternative Hypothesis: There is significant difference in pre-achievement scores of topic M1 and post-achievement scores of topic M1 of Experimental group among Std VIII science students. For testing null hypothesis we use data related to in pre-achievement scores of topic M1 and post-achievement scores of topic M1 of Experimental group among Std VIII science students collected by researcher. As data is paired, we consider data of difference between pre and post achievement scores. The details of which are given below.

Table no. 1. Details of Scores, variables and Normality test

Variables	Null for Normality test	Normality test	P value	Result of normality test
Difference EM1	The distribution of difference EM1 is normal with mean 4.947 and S.D. 3.83	One sample kolmogorov-smimov test	0.008	Reject null hypothesis

Graph 1.1a



From the above Table 1. it is observed that mean is 4.947 and SD is 3.83 which is normally distributed, p values for variables Difference EM1 is 0.008, these values are less than critical p value 0.05. Hence we reject null hypothesis for each variable case and data is not normally distributed.

7. FINDING: From the above it may infer that there is significant difference in pre-achievement scores of topic M1 and post-achievement scores of topic M1 of control group among Std VIII science students.

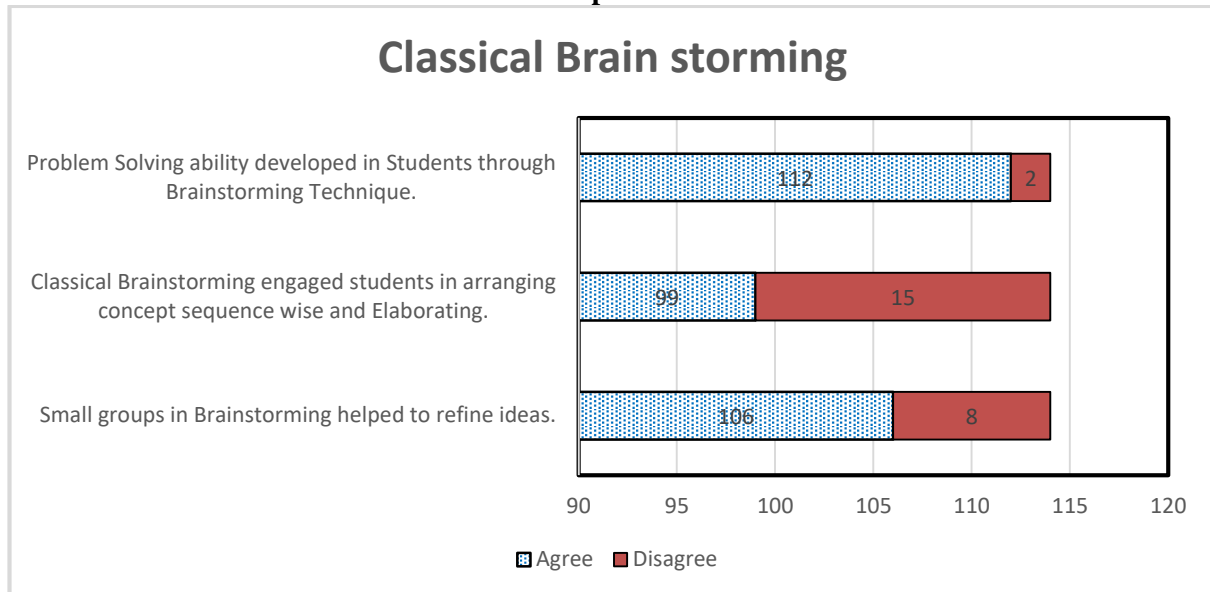
Table 2 Classical Brainstorming

		Agree	Disagree	Total
Small groups in Brainstorming helped to refine ideas.	Frequency	106	8	114
	Percent	93.0	7.0	100.0
Classical Brainstorming engaged students in arranging concept sequence wise and Elaborating.	Frequency	99	15	114
	Percent	86.8	13.2	100.0
Problem Solving ability developed in Students through Brainstorming Technique.	Frequency	112	2	114
	Percent	98.2	1.8	100.0

7.1. Interpretation:

Out of total 114 respondents, 106 (93%) agreed that Small groups in Brainstorming helped to refine ideas. Out of total 114 respondents, 99 (86.8%) agreed that Classical Brainstorming engaged students in arranging concept sequence wise and Elaborating. Out of total 114 respondents, 112 (98.2%) agreed that Problem Solving ability developed in Students through Brainstorming Technique.

Graph 1.2a



8. CONCLUSION:

There is significant difference in pre-achievement scores of topics Experimental module (EM1) and post-achievement scores of topic of Experimental Module (EM1) of experimental group among Std VIII science students. As these creative techniques under training programme helps students to involve themselves in different techniques of creativity, their interest, concentration and obviously retention of concepts increases. EM1 i.e Classical Brainstorming seems to be liked by most of students among all five techniques used as different modules. Classical Brainstorming engaged students in arranging concept sequence wise and Elaborating, also Small groups in Brainstorming helped to refine ideas. Problem solving ability developed in Students through Brainstorming Technique. Pupils were engaged in hands-on practical tasks and there was a high level of participation by both girls and boys. Teacher employed a variety of methodologies, including group work, during the lesson. There was an appropriate emphasis on developing the pupils' science concepts with creativity in Science topic. so Teachers should compulsorily try these types of creativity techniques in classroom so that the achievement level of the students should be enhanced as well as interest for subject will be developed among students.

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