

COMPARATIVE STUDY OF EFFECTIVENESS OF INQUIRY TRAINING MODEL WITH TRADITIONAL TEACHING IN TERMS OF CREATIVITY OF MIDDLE SCHOOL STUDENTS

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ABSTRACT

This research on focused on the comparative study of the test of creativity to middle school students in condition of Inquiry Teaching Model. This research focused on teacher's view of creativity and their classroom practices, and on student's performances on Tests of Creative Thinking by Baqer Mehdi, their attitude towards science subject. Here we compare Traditional Teaching Method and Inquiry Teaching Model to analyze creativity in the middle school students. The finding shows that teachers valued Inquiry Teaching Model in terms of creativity. They believed that the development of creativity depended on Inquiry Teaching Model. The finding form the student's data contributed to the development of a model linking parental factor, the medium of teacher and instructor encouragement. On the basis of findings practical recommendations have been for the promotion of creativity among school students. Main goal of the model is to bring the change in behavior among learners especially in the observable or visible behavior. These models are based on the stimulus controls and reinforcement theories. This study shows that inquiry training model could significantly improve the creativity of the students. Inquiry teaching model does not helps in teaching new content. But create curiosity in solving problem with puzzling situation. Puzzling situation motivates students to think in convergent as well as divergent manner. It helps to increase solving fluency and flexibility of students. Inquiry training model has the potentially in improving the creativity of students significantly. Thus inquiry training model was found to be effective on the basis of creativity.

KEYWORDS: *Inquiry Teaching Model, Creativity, Traditional Teaching, Middle School Students, Effectiveness*

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INTRODUCTION

Inquiry teaching model will be analyzed the great diversity of the creativity and attached variety of meaning it. For inquiry teaching model there are many theories have been proposed to analyze students creativity. In this study are presented relevant theoretical approaches for selected or limited categories. Creativity is powerful weapons which affects the scientific progress and change day to day life of commercial peoples. Taylor (1962p.2) realized that "creative acts affect enormously not only scientific progress, but society in general. Those nations who learn best how to identify, develop, and encourage the creative potential in their people may find themselves in very advantageous position".

There are many new techniques, skills and knowledge are available for student and teacher for changing their learning and working environment. This environment helpsteacher and students to progress their learning. Hence for

changing behavior of the student will give more attention the quality of education. Some time we compare to creativity as a mysterious gift for some people and we understand as good learning techniques in required environment. Mostly people use the term of creativity for art and craft, science invention, major and minor discovery, or they know the genius people behind all these innovative things. But purpose of this study to find out creativity to every student and looking the way of creativity which is reflected to all student activity. Everyone is creative because they use a different way to present their own work in expressive way that depend their thinking and interest. So that creative people are more productive, energetic of their work.

Here we compare creativity as respects to inquiry teaching model and find out creativity in science students of middle school. Because we know that the nature of inquiry teaching model is based on discovery learning. Through inquiry teaching model we want to produce among the student problem solving ability. Student investigate problem, use their experiences to solve the problem, create new idea and learn individuals learning through social experiences by inquiry teaching model. Student would use their knowledge to broaden their mental frame and develop their skill and satisfy curiosity about problem for this instructor provided all necessary inquiries, procedure and techniques. It is only possible inquiry teaching model but we all know about Traditional Teaching Method is only teacher centered, student roll as a silent learner, maximum times student goes in sleepy mode. Our study shows that teaching with inquiry teaching model is more than effective than traditional teaching methods. With the help of Inquiry Teaching Model learner develop their creativity. Results shows this success and findings also tell about fulfill study objectives.

Inquiry Training Models

Inquiry teaching model is one of the teachings which have its own strange. Bruce Joyce and Weil have put this model in the family of information process teaching models. The proponent of this model has highlighted several advantages of this model. It keeps students more active, more precise, develops creativity and facilitates learning. He has mentioned the applicability of this model in all subjects, now all the topics in each subject.

Inquiry teaching model is one such strategy in teaching which helps to the attainment of the sufficient objectives. The inquiries are natural in children, their inquiries may be of very elementary in the beginning, but may be taken up to a very high form of the efforts are properly guided and directed. Such man, along with Taba and Ausubel thought of an approach to develop these desired qualities amongst the children. Suchman's inquiry training model is based up on the organization of data and to build concepts of Taba and the presentation of concepts and then with data to be organized around concepts of Ausubel.

Richard suchman developed a generalized model of inquiry, according to him, "Inquiry Training Model is a generalized model which helps the students to develop the intellectual discipline necessary to search out data, process it, and apply logic to it".

Behavioral Model

Main goal of the model is to bring the change in behavior among learners especially in the observable or visible behavior. These models are based on the stimulus controls and reinforcement theories. These models have evolved from attempts to develop efficient systems for sequencing leaning task and shaping behavior by manipulating reinforcement as described by (Skinner, 1957). They include models for teaching facts, concepts and skills as well as models for the

reduction of anxiety and for relaxation. They also help in improving interpersonal behavior. Some of the behavioral models are listed below in table.

Table 1

Model	Major Theorist	Mission Or Goal
Contingency Management	B. F. Skinner	Facts concepts skill
Self control	B. F. Skinner	Social Behavior/skill
Relaxation	Rim and Masters Wolpe	Personal goals (reduction of stress, anxiety)
Stress reduction	Rim and Masters Wolpe	Substitution of relaxation for anxiety in social situation
Assertive Training	Wolpe, Lazarus, Salter	Direct, spontaneous expression of feeling in social situation
Desensitization	Wolpe	
Direct training	Gange Smith and Smith	Pattern of behavior skill

With the help of this behavioral model we can change learner’s behavior. In describing the behavior that is required of a student when he demonstrates his mastery of the subject or the skill, it is important to indentify, in very clear terms, exactly what he will do. This involves saying how he will recognize the cue or situation which will cause him to commence action or behavior, as well as a show he will recognized that the action has been successfully accomplished.

Creativity

Creativity is the ability to produce new forms by novel methods. Creativity is combination of ideas in a new and innovation ways. Generally the creative person finds a new association. The creativity tests are been developed to know the general and specific creativity. Here to assess of creativity of students, verbal test of creativity by Baqur Mehdi (1973) was selected which deals with three traits of creativity that is fluency, flexibility and originality which stands for number of relevant and unrepeatd ideas with difference in approach although, and uncommonness of a given response respectively. Baqur Mehdi test are two types, verbal and non verbal test of creative thinking.

Verbal Test of Creative Thinking by Baqur Mehdi (Hindi/ English)

This verbal test of creativity includes four sub tests, namely consequences test, unusual uses test, similarly test, and product improvement test. It provides three factor scores fluency, flexibility and originality for class VII and VIII students. 201-105-TR (1set includes 100 consumable question booklets and manuals.)

Non Verbal Test of Creative Thinking by Baqur Mehdi (English/ Hindi)

This test is intended to measure the individual’s ability to deal with figural content in a creative manner. Three types of activities are designed to measure the same picture, constriction, picture completion, Triangle and ellipse; this test can be used among the middle school children to the graduates. 201-106=TR (1 set includes 100 consumable question booklets and manual.

Creative thinking test of Beqer Mehdi’s (1973, 1975, 1985 a & b) is both of verbal and non-verbal, were we used in my present research paper. Beqer Mehdi’s suggested four verbal tests these are Consequences test, unusual uses, New Relationship and Product Improvement. Picture Completion, Triangles and Ellipses are three non-verbal tests for creative thinking. The Beqer Mehdi tests scoring procedures and description is shown in the following section. For creative thinking if researcher wanted new responses than he can use modern technology and advanced knowledge of scoring procedures. In this study researcher worked out there are three dimensions for verbal test are Originality, flexibility and

fluency, and the two dimensions for non verbal test are elaboration and originality for student creativity in science subject.

OBJECTIVES OF THE STUDY

- To compare the creativity scores of experimental group students and control group students.
- To compare the mean pre and post creativity scores of experimental group students.

Hypotheses

- There is no significant difference between the mean creativity score of experimental group students and control group students.
- There is no significant difference between the mean pre and post creativity score of experimental group students.

TOOLS

Verbal Test of Creative Thinking

To assess of creativity of students, verbal test of creativity by Baqur Mehdi (1973) was selected which deals with three traits of creativity that is fluency, flexibility and originality which stands for number of relevant and unrepeated ideas with difference in approach although, and uncommonness of a given response respectively. This test is suitable for age group of 12 to 12. Time for test was 45 minutes. Test retest reliability ranged from 0.896 to 0.959. Inter score reliability for the factor scores ranged from 0.653 to 0.981.

Design

The present study was pre test- post test control group design and experimental in nature. Two groups named experimental group and control group were randomly assigned the treatment. Twenty lesson of science were presented through ITM to the students belonging to experimental group while the students belonging to control group were taught through traditional method.

Treatment of ITM to the experimental group was given for 20 days. In the first period the treatment was given to experimental group students. In the same day the same content was to the students of control group through traditional method.

Schematic Representation of Designs is Given under the Table

Table 2

Activity	Experimental Group	Control Group	Type of Variable	Time Taken
Orientation of Inquiry Training Model	*	0	Independent	40 mints 1 day
Pre Test Creativity	*	*	Dependent	40 mints 1 day
Teaching Through in quiry Training Model	*	0	Independent	40 mints 20 day
Teaching Through Traditional Method	0	*	Independent	40 mints 20 day
Post Test Creativity	*	*	Dependent	40 mints 1 day

Administration of the Test and Collection of Data

Data collection is essentially on important part of the research process so that the inferences, hypotheses or generalizations tentatively held may be identified as valid, verified as correct or rejected as untenable. After the selection

of sample and the required tools the task before the investigator was to collect data.

RESULT AND DISCUSSIONS

Comparison of mean creativity scores of experimental group students and control group students.

The first objective was “To compare the mean creativity scores of experimental group students and control group students”. The data were analyzed with the help of independent sample T-test. The results given in below;

Table 3

Group	N	Mean	SD	df	T
Experimental	30	29.10	5.29	58	3.98*
Control	30	22.60	7.23		

*Significance at 0.01 Level

From table it is evident that the t- value is 3.98, which is significance at 0.01 levels with df 58. It shows that the mean scores of creativity of experimental group students and control group students differ significantly. In this context, the null hypothesis that “there is no significant difference between the mean score of creativity of experimental group students are control group students” is rejected. Further, from table 4.1 it is evident that the mean scores of creativity of experimental group students are 29.10. Which are significantly higher than that of control group students which is 22.60? It may therefore, be concluded that inquiry training model could significantly improve the creativity of the students.

Creativity

Having a rich store of knowledge in an area is the basis for creativity. Inquiry teaching model does not helps in teaching new content. But create curiosity in solving problem with puzzling situation. Puzzling situation motivates students to think in convergent as well as divergent manner. Divergent thinking helps in increasing creativity, it also motivates students to think in holistic and detailed manner for the solution of problem. It helps to increase solving fluency and flexibility of students.

Comparison of mean pre and post creativity score of experimental group students.

The second objective was “To compare the mean pre and post creativity scores of experimental group students”. The data analyzed with the help of paired sample T-test. The results are given below.

Table 4

Test	N	Mean	SD	df	T
Pre- test	30	21.83	5.84	29	4.775*
Post-test	30	29.36	5.17		

*Significance at 0.01 Level

From the table, it is evident that the T-test value is 4.775, which is significant at 0.01 levels with df 29. It shows that the mean pre and post creativity scores of experimental group students differ significantly. In this context, the null hypothesis that “There is no significant difference between the mean pre and post creativity score of experimental group students” is rejected. Further, from table it is evident that the mean post creativity score of experimental group students is 29.36, which is significantly higher that of pre creativity scores of the same group which 21.83 is. It may, therefore be concluded that inquiry training model has the potentially in improving the creativity of students significantly. Thus inquiry

training model was found to be effective on the basis of creativity.

Findings

- Inquiry training model was found effective than traditional method. When the mean creativity scores of experimental group students was compared to control group students.
- Inquiry training model was found effective than traditional method when the mean pre or post creativity scores of experimental group students was compared.

Implications and Recommendations

The present study is related to the teaching of science through inquiry training model for class VII. The findings of this study have implications for teacher student's text book writers and researchers.

As a result of this study designed to investigate the promotion of creativity among school students.

- Freedom of the use of new creative techniques in the classroom should be given by the teacher to the students; from time to time their creative works should be rewarded and encouraged by the teacher. In order to generate restricted conditions in the classroom, teacher can use problem solving and discovery method.
- Teacher can identify which students are interested and have creativity in different areas of science, how students can show their creativity by participating in science clubs, mathematics clubs, social, cultural and literary clubs, society and committees.
- For developing creativity among the students many activities are important like mind mapping, brainstorming, debates, art and craft, sports, drama, music and film are necessary part of everyday learning.
- In today perspective, teachers and guardians make full efforts to promote the interest and creativity of students, so that the student can present his thinking and creativity effectively in front of other people in order to develop their sense of self-confidence and self-learning.

CONCLUSIONS

Creativity is a very precious and unique quality in an individual that enables and individual to solve complicated problem in deferent Inquiry Training Model. Creativity has different meaning, at different time and in different contexts. Generally creativity has been discussed in term of its end products, the creative person and also of the creative process and creative environment. This study examines the creative student in field of science subjects. In this paper I used Inquiry Training Model to check student's creativity in science subject, and after the test and finding I saw that student behavior is change. They increase their capacity, interest, confident and creativity in science. I found Such an Inquiry Training Model was very effective than traditional teaching method. Studies result shows that a teacher will use Inquiry Teaching Model their own teaching strategies than definitely he gives their students something different material of his subjects. Inquiry teaching model is one such strategy in teaching which helps to the attainment of the sufficient objectives. The inquiries are natural in children, their inquiries may be of very elementary in the beginning, but may be taken up to a very high form of the efforts are properly guided and directed. For this I use this study in middle school student because their mind is very creative, and I easily implemented them, after this I check their behavior changes. Definitely here results shows that the

Inquiry Teaching Model worked with respect to creativity.

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