

# Creativity and Module with and without Jerk Technology in Terms of Achievement of B.Ed Students

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## ABSTRACT

The objective of this study is to find out the effect of treatment, creativity and their interaction on achievement in environment education by considering Pre. achievement in environment education as covariate. This study was experimental in nature and based on pre-test post-test parallel group design. There were two groups and two levels of treatment namely module with jerk technology and module without jerk technology. The sample for Study comprised of 60 student teachers (30 student teachers per group) of academic session of 2008-2009 of regular B.Ed. course of Government PGBT College, Ujjain. Study revealed that creativity significantly affected the achievement of students in Environmental Education. Higher creative students were found to be benefited significantly more than these of low creative students.

**Keywords:** Modular approach, jerk technology, creativity, achievement

Achievement is a fundamental aspect of everyday life, affecting people's work, interpersonal relationships, sense of being and leisure (Struthers, Menes, Schonwttter and Perry, 1996). By using achievement test it has been found that person differ in their achievement abilities.

There are various known and unknown reason for this. Creativity is one of them.

It is a unique way of viewing the world or situation. Some main characteristics of a creative persons are- passion towards their goal, to accept challenge. Freedom to exercise and readiness to change according to situation.

As we know that curiosity is the root cause of all types of discoveries and innovations. So this quality should be developed in pupils by some suitable methodology. For example projects, activity based learning and self-learning materials etc.

## Modular Approach

Module is one of the type of self learning material designed to help the learners to achieve predetermined objectives.

It is an instructional plan which is usually larger than a class hour or a session, but smaller than a course plan. To conduct these study two types of modules were prepared-Module with and without Jerk Technology. Initially module on Environment education was developed then another type of module namely module with Jerk Technology was prepared by using tools of Jerk Technology according to the nature of content. Hence, There were two types of treatment namely module with Jerk Technology and module with Jerk Technology. Jerk Technology is an innovation in the field of education by Sansanwal (2000). There are nine tools of its namely mirror image writing, disproportionate word writing, small writing, double negative sentences ,unusual sentence construction. Logical illogic words, Use of multiple words, misfit examples, teachers knowingly mistake. Objectives of these tools are to make teaching and learning process interesting, to create a tension free situation of classroom and to break monotony in classrooms etc.

## Review of Related Literature

Crockett Ronald Cole (1980) used the Plato IV CAI lesson in modular form and found that certain cognitive and personality variables are predictive of academic achievement.

Ramsey, Bette (1981) done a study. The impact of module in relation to self concept and found that self concept of students was not affected significantly by experiencing modules.

Maxwell, Hugh Crawford (1983) studied selected personality traits as related to achievement in a modularized self paced program in media production teachings. The study reflected that the students who demonstrated high self concept could be expected to show higher levels of achievement.

Van, Travis, Irene Graham (1985) Studied the effect of art modules on the achievement and attitudes of student and found that the students of ext. group achieved move on above stated variables

Sontakey (1986) Studied the personality factory associated with high and low achievers in biological science and reported that High achievers were move intelligent, less excitable tough minded, self-reliant and realistic than low achievers in biological science.

Kaile (1988) worked out the relationship of intelligence and creativity with scholars achievement in mother tongue and foreign language and found that the mess uses of intelligence and creativity had more or less identical relationship with scholarship achievement.

It is evident from Previous research that very little work has been done on module with and without Jerk Technology. The researchers attempted to highlight effectiveness and correlation of achievement with some variable like self concept, personality attitude, gender and creativity etc. on module but there is no consistency in this finding so, researcher decided to work in this area to fill this gap. Jerk Technology has been tried out by shrinivasanan (1999) and Tourani (2001). They found that Jerk Technology was moderately satisfactory in terms of gain of achievement. Touravi (2006) has conducted a comparative study of conventional method and Jerk Technology and found that Jerk Technology is move effective than lecture method Verma (2007) conducted a comparative effectiveness of JT embedded modulator approach and traditional

approach and found that JT embedded modulator approach was more effective than traditional method.

As Jerk Technology and module have proved an effective means of teaching. So to make module more joyful, to make students active learner, to help learners in making aware of what he understand, to help learners in increasing the presence of mind in the classroom, to break the monotony and to create tension free atmosphere in teaching-learning process, there is a great need to change the pattern of developing module and add some more in order that the student will take more interest and also enjoy the module.

## Objectives

1. To study the effect of Treatment on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate.
2. To study the effect of creativity on achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate.
3. To study the effect of interaction between treatment and Creativity on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate.

## Hypotheses

1. There is no significant effect of Treatment on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate.
2. There is no significant effect of Creativity on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate.
3. There is no significant effect of interaction between treatment and Creativity on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate.

## Methodology

### Sample

The sample for Study comprised of 60 student teachers (30 student teachers per group) of academic session of 2008-2009 of regular B.Ed. course of Government PGBT College, Ujjain. There were 25 Females and 35 Males in the group. They were either graduate or postgraduate in different disciplines. They have almost same socio-economic status and background. The age range of the student teachers was from 23 to 55 years. Students were allotted group randomly. The sample was categorized in two groups. Experimental Group Number 1 (Taught through Module with Jerk Technology) and Experimental Group Number 2 (Taught through Module without Jerk Technology) comprised of 30 and 30 student teachers respectively. Medium of instruction was Hindi.

### Experimental Design

Present study was experimental in nature and employed pre-test post-test parallel group design. The layout of this design was as follows:

G1    O1    X1    O2  
G2    O1    X2    O2

Where, X1 = Treatment given by Module with JT

Where, X2 = Treatment given by Module without JT

O1        = pre-test,

O2        = Post-test

There were two groups. One group was randomly considered as Experimental Group Number 1 and another as Experimental Group Number 2. There were two levels of Treatment.

1. Module with Jerk Technology
2. Module without Jerk Technology

The student teachers of both the Experimental Group used module as self learning material. They learnt themselves as per instructions given in module. Investigator was present to solve their problems.

Three units of Environmental Education were taught through Module with Jerk Technology and Module without Jerk Technology to Experimental Group Number 1 and Experimental Group Number 2 respectively at the rate of 40 minutes per day for 53 days.

### Tools

1. To measure creativity Torrance Test of Creative Thinking was used.
2. To measure the Achievement of student teachers, different Criterion Tests were developed. These Criterion Tests were based on the terminal behaviors given in module.

### Data Analysis

Statistical techniques used for analysis of data were as follows:

1. In order to study the effect of Treatment on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate the data were analyzed with the help of 2×2 Factorial Design ANCOVA.
2. In order to study the effect of Creativity on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate the data were analyzed with the help of 2×2 Factorial Design ANCOVA.
3. In order to study the effect of interaction between Treatment and Creativity on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate the data were analyzed with the help of 2×2 Factorial Design ANCOVA.

## ANALYSIS AND INTERPRETATION OF RESULTS

There were two levels of Treatment, namely Module with Jerk Technology and Module without Jerk

**Table 1:** Brief description of Tools

Name of Variable	Author of the Tool	Co-efficient co-relation	Reliability	Validity	Sample
Creativity	Torrance	.60 to .81	.90		From elementary school to graduate students

Technology. The students were categorized into two levels of Creativity, namely High Creative students and Low Creative students. Thus there were two levels of Treatment and two levels of Creativity. Therefore, data were analyzed with the help of 2×2 Factorial Design ANCOVA with unequal cell size. The results are given in Table 2.

**Table 2:** Summary of 2×2 Factorial design ANCOVA for Achievement in Environmental Education by considering Pre-Achievement as covariate

Source of Variance	df	SSy.x	MSSyx	Fy.x
Treatment	1	34.03	34.03	0.10
Creativity	1	3262.28	3262.28	9.94*
Treatment X Creativity	1	312.25	312.25	0.95
Error	55	18045.08	328.09	
Total	58			

\* Significant at 0.01 level

**1. Effect of Treatment on Achievement in Environmental Education by considering Pre-Achievement in Environmental Education as Co-variate**

From Table 2, it can be seen that the F-value for Treatment is .10, which is not significant. It indicates that the mean score of achievement in Environmental Education taught through Module with Jerk Technology and Module without Jerk Technology did not differ significantly when pre-Achievement in Environmental Education was considered as covariate. In this context, the null hypothesis that, “There is no significant effect of Treatment on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate” is not rejected. Further the adjusted mean achievement score of students taught through Module with Jerk Technology was 205.6 which is not significantly different than those taught through Module without Jerk Technology whose adjusted mean score was 203.70. It may therefore be concluded that both types of Treatment were effective to same extent.

**2. Effect of Creativity on Achievement in Environmental Education by considering Pre-Achievement in Environmental Education as co-variate**

From Table 2, it can be seen that the F-value for

the effect of Creativity is 9.94, which is significant at 0.01 level with df =1/58. This reflects that the adjusted mean achievement scores of High Creative students differ significantly from those of Low Creative students by considering pre-Achievement in Environmental Education as covariate. Thus the null hypothesis that, “There is no significant effect of Creativity on Achievement of Environmental Education by considering pre-Achievement in Environmental Education as covariate” is rejected.

Further, the adjusted mean score of achievement of High Creative students was 213.08 which is significantly higher than those of Low Creative students whose adjusted mean score of achievement was 196.13. It may therefore be concluded that Creativity had a significant effect on Achievement of students in Environmental Education. The result related to this Objective reflects that there was significant effect of Creativity on the achievement of the students. High Creative students Achieve more than Low Creative students, when groups were matched with respect to pre-Achievement in Environmental Education. The possible reason behind it may be that although provision were made to provide learning experience to all categories of students through Module with Jerk Technology and Module without Jerk Technology, but generally Creative students are adaptable to any new type of changes or experiences. Learning through module was a new experience or rather a new type of change in the field of learning for them. So, Highly Creative students easily adapted themselves. Also, the module has various types of experiences and assignments related to different aspects of cognitive domain. It may possible that Highly Creative students could get more benefited than their classmates. The possible reason behind Higher Achievement of High Creative students may be that the component of Creativity like, Fluency, Flexibility, and Originality has connection with achievement. Hence, Creativity ensures high achievement in Environmental Education.

**3. Effect of Interaction between Treatment and Creativity on Achievement in Environmental Education by Considering Pre-Achievement in Environmental Education as covariate**

From Table 2, it can be seen that the F-value for interaction between Treatment and Creativity

is .95 which is not significant. It indicates that there was no significant effect of resultant of the interaction between Treatment and Creativity on Achievement in Environmental Education. When Pre-Achievement in Environmental Education was considered as covariate. In this context the null hypothesis that, "There is no significant effect of the interaction between Treatment and Creativity on Achievement in Environmental Education by considering pre-Achievement in Environmental Education as covariate", is not rejected.

### Finding

1. Both types of Treatment namely Module with Jerk Technology and Module without Jerk Technology were found to be effective to same extent by considering pre-Achievement in Environmental Education as covariate.
2. Creativity significantly affected the Achievement of students in Environmental Education. High Creative students were found to be benefited significantly more than those of Low Creative students by considering pre-Achievement in Environmental Education as covariate.
3. Achievement of B.Ed. students in Environmental Education was found to be independent of interaction between Treatment and Creativity when pre-Achievement in Environmental Education was considered as covariate.

### CONCLUSION

Finding reflects that there was significant effect of Creativity on the Achievement of the students. High Creative students achieved more than Low Creative students when groups were matched with respect to Pre-Achievement in Environmental Education.

It can also be concluded that both types of module can be used successfully for Highly Creative students. So, there is a need to increase the creativity of students by various means .

### SUGGESTIONS FOR FURTHER RESEARCHES

1. Module With and Without Jerk Technology can be developed on different subjects at different levels.

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