

# Creativity of Student-Teachers with Reference to their Gender and Locality

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**P.Ponnusamy**

*Assistant Professor, Department of Education*

*Gandhigram Rural Institute (Deemed to be University), Dindigul, Tamil Nadu, India*

## Abstract

*Creativity is a unique gift of nature, a highly valued human quality that has been known for a long time to have its influence on scientific, technological and artistic spheres of human activity. The rapidly changing demands and challenges existing in the world today have almost necessarily been accompanied by creative expression and contributions from talented persons. When we look critically at the present-day educational practice, one of the lacunae is a lack of importance given to creativity. With this background, the study was conducted to study the creativity level of the student teachers at the secondary level. The main result of the study reveals that selected student teachers were emotionally strong.*

**Keywords:** Creativity, Fluency, Flexibility, Originality and Student-teachers

## Introduction

To make educational system dynamic and creative force, teachers need to contribute to the advancement of the frontiers of knowledge and have to perform two main functions. Firstly, they have to play an important role in the transformation of the education system through active participation in the educational processes. Secondly, they have to assist in the development of adaptable, rational, and creative individuals. Because today is the age of science and technology, and in this society, every individual is facing a huge number of problems in his daily life. Having understood, the importance of giving education to all the citizens of the country is very well addressed in the scenario of world education, increasing the quality and quantity of education at various levels are voiced by the administrators as well as the educators.

The need of society changes from time to time and place to place. Our present system and its practices should suit the emerging needs of society. What is felt important today need not be repeated to our offsprings. This naturally necessitates the need for changes in the present system of education. "As is the teacher, so is the student; As is the training, so is the teacher." The above statements reveals the importance of increasing the quality of training inputs to be imparted to the student teachers, which will make them the best teachers to contribute not only to their student community for whom they are going to teach but also to the entire community in which they live. So teacher educators and teacher preparation institutions have the responsibility to contribute prominently to improving the quality of human life in every society. High quality of the educational process is characterized not by its stagnation or static nature or monotonous pouring of information in the classroom but by its innovative changes and novel practices in our teaching and learning. In short, the present teaching should help the individuals to solve their day to day problems through divergent thinking (in other words, the creative thinking).

This will make the present education more useful and reachable to the teachers and the taught. Having motivated by this, the investigator is pleased to investigate the creativity level of student teachers at the secondary level.

### Defining the Term- Creativity

The definition of creativity, which was used as the basis of Passi Tests Creativity, is given as: ‘Creativity is a multidimensional (verbal and nonverbal) ‘attribute differentially distributed among people and includes chiefly the factors of seeing problems, fluency, flexibility, originality, inquisitiveness and persistency.’

### Fluency

It means the frequency with which relevant and unrepeated ideas come to one’s mind after a question is put.

### Flexibility

It represented by a person’s ability to produce ideas, which differ in approval or thought trend.

### Originality

It is the uniqueness of response. Guiford (1962) defines originality as ‘the production of unusual, for fetched, remote or clever responses among members of a certain population that is culturally homogenous.’

### Significance of the Study

The result of the study will be an eye-opener to the teacher education institutions and that will also support them to realize and restructure the teaching-learning environment in their institutions.

### Statement of the Problem

The success of the teachers in teaching is determined by many factors and the creative capacity is one among them. With this context, the study was undertaken to know the creativity level of the future teachers and to verify whether there are any significant differences exist among the student teachers concerning their gender and locality.

### Objectives

The main objectives of the study are as follows.

1. To investigate the creativity level of the student teachers at the secondary level.
2. To study the verbal and non-verbal creativity of the student teachers.
3. To investigate the creativity attributes such as fluency, flexibility and originality of the student teachers.
4. To study the effect of independent variables such as gender and locality on the dependent variable - creativity of the student teachers.

### Hypotheses

The null hypotheses used in the study are

- H<sub>01</sub>: There is no significant difference between the creativity of male and female student teachers; and
- H<sub>02</sub>: There is no significant difference between the creativity of rural and urban student teachers

### Method

The investigator adopted a normative survey as the research method in this study.

### Population and Sample

Student-teachers of Secondary Teacher Education Colleges located in the districts - Coimbatore, The Nilgiris, and Tirupur are the population of the study.

As for the study, only 140 student-teachers were selected as the sample from 10 secondary teacher education colleges of the districts - Coimbatore, The Nilgiris, and Tirupur using Simple Random Sampling procedure. The details of the distribution of the selected sample for the study are given in the following table.

**Table 1 Distribution of the Sample**

Nature of Institute	Male		Female		Total
	Rural	Urban	Rural	Urban	
Govt.	15	15	20	20	70
Self finance	15	15	20	20	70
<b>Total</b>	<b>30</b>	<b>30</b>	<b>40</b>	<b>40</b>	<b>140</b>

## Tool

Passi Tests of Creativity (PTC) were used to measure the creativity level of the student teachers at the secondary level. In all it consists of six sub tests, namely: (i) The Seeing Problems Test, (ii) The Unusual Uses Test, (iii) The Consequences Test, (iv) The Test of Inquisitiveness, (v) The Square Puzzle Test and (vi) The Blocks Test of Creativity. For the study, this research tool was prepared in bi-lingual (Tamil and English) and used by the researcher to measure the creativity level of the student teachers at the secondary level. The first three tests of Passi Tests of Creativity are verbal and the last three tests are partially nonverbal for the simple reason that the test material of these three tests presents the non-verbal stimuli.

## Scoring Procedure of Passi Tests of Creativity

In each sub-scale, each 'accepted response' has given the score 1(one) and 'not accepted response' has given the score 0 (zero). The sum of scores obtained by the student teachers in all the six tests of creativity is the score of the Composite Creativity of them. The sum of scores of the first three tests represents the 'Verbal Creativity score,' and the sum of scores of the last three tests represents the 'Non-verbal Creativity score.' The scores of Creativity attributes such as Fluency, Flexibility and Originality are calculated as follows.

The sum of Fluency scores in Seeing Problem Test, Unusual Uses Test, Consequence Test and Block Test is the Composite Fluency Score. The sum of Fluency scores in Verbal Creativity Tests: Seeing Problem Test and Unusual Uses Test, Consequence Test is the Verbal Fluency Score. Similarly, the sum of Fluency scores in the Non-verbal Creativity Test: Block Test of Creativity is the Non-verbal Fluency Score.

The sum of Flexibility scores in Unusual Uses Test and Block Test is the Composite Flexibility Score. Here, the Flexibility score in Verbal Creativity Test: Unusual Uses Test is the Verbal Flexibility Score and the Flexibility score in Non-verbal Creativity Test: Block Test of Creativity is the Non-verbal Flexibility Score

The sum of Originality scores in Unusual Uses Test, Consequence Test and Block Test is the

Composite Originality Score. The sum of Originality scores in Verbal Creativity Tests: Unusual Uses Test and Consequence Test is the Verbal Originality Score. And, the sum of Originality scores in Non-verbal Creativity Test: Block Test of Creativity is the Non-verbal Originality Score.

In the study, the investigator followed the procedure as mentioned below to categorize the Creativity level of the sample based on their scores in the Passi Tests of Creativity.

The scores, which were One Standard Deviation (1SD) above the mean were used to identify the 'high creative' group, and those who were One Standard Deviation (1SD) below the mean were identified as the 'low creative' group. Middle ones were 'average creative' group.

## Reliability and Validity of the Passi Tests of Creativity

The results of the Split-half Method of reliability test to each sub-test of Passi Tests of Creativity and Composite Test are given in the following table.

**Table 2 Reliability Test Scores for Passi Tests of Creativity**

S.No.	Passi Creativity Tests	Correlation Coefficient
1	The Seeing Problem Test	0.555
2	The Unusual Uses Test	0.726
3	The Consequences Test	0.694
4	The Test of Inquisitiveness	0.768
5	The Square Puzzle Test and	0.739
6	The Blocks Test of Creativity	0.666
	<b>Composite Creativity Test</b>	0.758

The tool prepared in bilingual (Tamil and English) was presented to a group of 5 teacher educators, 5 secondary school teachers, and 5 higher secondary school teachers. All the juries carefully read each item of the tool and gave comments and suggestions on the following aspects as requested by the researcher.

- The length of the items
- The subject matter of trivial importance if any
- The items vaguely worded and improperly arranged if any
- The general format of the tool

The juries assured that the tool had face validity and content validity.

## Results and Discussion

### The Creativity of the Student-Teachers: Descriptive Analysis

The mean and standard deviation scores of the sample in overall Passi Tests of Creativity are 123.381 and 18.274, respectively. In total, 34 (24.5 percent) student teachers' Composite Creativity score is 1SD below ( $=123.381 - 18.274$ ) the mean score and therefore, they are classified as 'Low Creative Student Teachers.'

Similarly, 36 (25.5 percent) student teachers' Composite Creativity score is 1SD above ( $=123.381 + 18.274$ ) the mean score and therefore, they are classified as 'High Creative Student Teachers.' And, 70 (49.75 percent) student teachers' Composite Creativity score is between 1SD above ( $=123.381$

+ 18.274) and 1SD below ( $=123.381 - 18.274$ ) the mean score and therefore they are classified as 'Average Creative Student Teachers'.

The mean and standard deviation scores of the sample in verbal creativity are 74.61 and 12.88, respectively. Similarly, the mean and standard deviation scores of the sample in non-verbal creativity are 48.78 and 11.89, respectively. These mean results show that the student-teachers were better in verbal creativity than that of non-verbal creativity.

The mean scores of student teachers in Creative attributes – Fluency, Flexibility and Originality are 55.45, 15.37, and 29.94, respectively. The mean score (55.45) of student teachers in Creative attribute – Fluency is better than their mean scores in Creative attributes- Flexibility and Originality.

The following table shows the gender-wise mean scores of student teachers in the Passi Creativity test.

**Table 3 Gender-wise Mean and SD Scores of Student-teachers in Passi Creativity Tests**

S. No.	Creativity	Gender-wise Sample				Calculated 't' value	Result
		Male (n=60)		Female (n=80)			
		Mean	SD	Mean	SD		
1	Composite	123.31	18.66	123.45	17.93	0.045	NS
2	Verbal	73.37	12.33	75.84	13.33	1.133	NS
3	Non-verbal	49.94	12.57	47.61	11.07	1.142	NS
4	Fluency	55.86	10.71	55.04	9.91	0.463	NS
5	Flexibility	15.49	5.80	15.24	5.04	0.267	NS
6	Originality	29.33	10.30	30.56	10.26	0.7	NS

Note: NS- not significant at 0.05 level

The table 3 explains that the selected female student teachers (M=123.45) have better creativity than the selected male student teachers (M=123.31) and its calculated 't' value indicates that there is no significant difference between the creativity level of male and female students since it is less than the table 't' value ( $=1.96$ ) at 0.05 significant level.

In verbal creativity, the female student teachers (M=75.84) are better than the male student teachers (M=73.37) and their calculated 't' value indicates that there is no significant difference between the verbal creativity level of male and female students.

In non-verbal creativity, the male student teachers (M=49.94) are better than the female student teachers (M=47.61) and their calculated 't' value indicates

that there is no significant difference between the non-creativity level of male and female students.

In the fluency component of creativity, the male student teachers (M=55.86) are better than the female student teachers (M=55.04) and their calculated 't' value indicates that there is no significant difference between the creativity-fluency level of male and female students.

In the flexibility component of creativity, the male student teachers (M=15.49) are better than the female student teachers (M=15.24) and their calculated 't' value indicates that there is no significant difference between the creativity-flexibility level of male and female students.

In the originality component of creativity, the female student teachers (M=30.56) are better than the

male student teachers ( $M=29.33$ ) and their calculated 't' value indicates that there is no significant difference between the creativity-originality level of male and female students. The following table shows the locality-wise mean scores of student teachers in the Passi Creativity Test.

**Table 4 Locality-wise Mean and SD Scores of Student-teachers in Passi Creativity Tests**

S.No.	Creativity	Locality-wise Sample				Calculated 't' value	Result
		Rural (n=70)		Urban (n=70)			
		Mean	SD	Mean	SD		
1	Composite	122.49	19.49	124.27	16.9	0.577	NS
2	Verbal	73.83	13.71	75.38	11.99	0.712	NS
3	Non-verbal	48.66	12.13	48.89	11.66	0.114	NS
4	Fluency	54.52	10.31	56.38	10.26	1.07	NS
5	Flexibility	15.58	5.72	15.16	5.14	0.457	NS
6	Originality	29.76	11.04	30.13	9.50	0.213	NS

Note: NS- not significant at 0.05 level

The table 4 explains that the selected urban student teachers ( $M=124.27$ ) have better creativity than the selected rural student teachers ( $M=122.49$ ) and their calculated 't' value indicates that there is no significant difference between the creativity level of rural and urban students.

In the verbal creativity, the urban student teachers ( $M=75.38$ ) are better than the rural student teachers ( $M=73.83$ ) and their calculated 't' value indicates that there is no significant difference between the verbal creativity level of rural and urban students.

In the non-verbal creativity, the urban student teachers ( $M=48.89$ ) are better than the rural student teachers ( $M=48.66$ ) and their calculated 't' value indicates that there is no significant difference between the non-creativity level of rural and urban students.

In the fluency component of creativity, the urban student teachers ( $M=56.38$ ) are better than the rural student teachers ( $M=54.52$ ) and their calculated 't' value indicates that there is no significant difference between the creativity-fluency level of rural and urban students.

In the flexibility component of creativity, the rural student teachers ( $M=15.58$ ) are better than the urban student teachers ( $M=15.16$ ) and their calculated 't' value indicates that there is no significant difference between the creativity-flexibility level of rural and urban students.

In the originality component of creativity, urban student teachers ( $M=30.13$ ) are better than the rural

student teachers ( $M=29.76$ ) and v indicates that there is no significant difference between the creativity-originality level of rural and urban students.

### Educational Implications

The educational implications of the study are as follows.

- Creative teachers are the need of the hour in our school system.
- Since there is no influence of gender and locality on the creativity of the student teachers, there is no need to give much importance to either male or female and rural or urban student teachers in terms of practices in teaching.

### Suggestions

The following suggestions are recommended to carry out future researches in this line.

- The same study could be conducted to the school teachers
- Researchers may attempt to find the relationship between the creativity and teaching competence of the school teachers at different levels; and
- A study may be carried out to know the creativity level of school students

### Conclusion

Creativity has a significant role in individual and as well as societal development. It can be influenced by the schools through classroom activities with the help of teachers with enough creative potential.

The teachers, as change agents, can motivate the development of creative skills among the students. It will help the students to gain the skills and knowledge necessary to generate novel and useful ideas (Mojgan Afshari et al., 2013). The ultimate aim of our educational system is to make an ordinary man as an intellectual man having the ability to use the learned knowledge to communicate, collaborate, analyze, create, innovate and solve problems. One of the very important skills to develop among the young learns of today is creativity. It can be fostered and further enhanced through proper educational activities (Gajathiswari et al., 2016). So, the teachers play an important role in our society to have many good changes and advancements for our better survival. One of the results of this study reveals that the majority of trainee teachers have an average level of creative skills. They are better in verbal creativity than non-verbal creativity and also they are good in fluency component of creativity when compare it with flexibility and originality. Non-verbal creativity and the components – flexibility and originality of creativity are more important aspects of inventing any

new materials or equipment or novel ideas/concepts. Hence, the results of this study may be helpful to the authorities in the line of teacher education to plan and give useful professional development training programs to the teachers and as well as to the trainee teachers. Professional development training are essential to the teaching fraternity not only to update their knowledge but to give their best contribution to national development.

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### Author Details

**Dr.P.Ponnusamy**, Assistant Professor, Department of Education, Gandhigram Rural Institute (Deemed to be University), Dindigul, Tamil Nadu, India, **Email ID:** pponnusamy56@gmail.com