

RELATIONSHIP BETWEEN CREATIVITY DIMENSIONS AND DEMOGRAPHIC VARIABLES OF SECONDARY TEACHERS

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Creativity is defined as the ability to bring something new into existence. Creativity is distinguished by novelty, originality and unusually inventiveness. An individual who is flexible in thought and action, who can produce novel ideas, express his ideas fluently along with certain personality traits is said to be creative. But in most of the formal teaching-learning situations the essential aspect, creativity is often neglected. As pointed out by Guilford (1967) "teachers always want a correct answer but not clever answer". Creativity includes chiefly the abilities of fluency, flexibility, originality, transformation, inventiveness, productive designing, complexity, novelty and elaboration" (Gupta, 1980). Subsequently, Torrance (1966) redefined creativity as "a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, identifying the difficulty, searching for solutions, making guesses for formulating hypothesis and possibly modifying and retesting them and finally communicating the results". Truly, it seems that "creativity, like love, is a splendoured thing."

Dimensions of Creativity

Psychologists addressed more than two dozens of such dimensions. For example, fluency, originality, flexibility, elaboration, divergent thinking, convergent thinking, novelty, ability to produce greater and total number of ideas, uniqueness, usefulness, independent in judgement, resourcefulness, independence in thought and action, etc. But out of the dimensions mentioned above three dimensions - fluency, originality and flexibility are very important dimensions for which understanding and measurement of creativity are plausible.

- **Flexibility:** This includes (i) looking at the same problem from different angles (ii) expressing the same idea in different forms (iii) suggesting several captions to stories and passages and (iv) non-adherence to routine answers.
- **Originality:** It involves (i) asking questions which others do not ask (ii) giving original answers to questions (iii) coming out with unusual and challenging problems and (iv) showing considerable novelty in his ideas and expressions.

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- **Fluency:** It means (i) coming out with a number of suggestions whenever asked for, (ii) having lots of ideas in different fields of knowledge, (iii) having a large fund of active vocabulary and (iv) expressing a lot on any topic suitable to his use.

Creative Process

The traditional descriptive view of the creative process has been in terms of stages or steps. Wallace (1965) has advanced a four stage analysis. In this view the creator goes through,

1. a period of preparation.
2. a period of incubation,
3. an illumination and
4. a period of verification.

The “period of preparation” is characterized by such activities as defining the problem, gathering the data and material and choosing a plan of action. During “incubation”, it has been suggested that the unconscious mind takes over and continues working on the problem in some way that is not understood. “Illumination” is the moment of insight. The necessary solution is suddenly realized. It can happen in many ways and under many circumstances - while awake or asleep, at some every day task, while day-dreaming and some times months after the problem was put aside. The “period of verification” is during which the illumination is tried out and tested to determine whether or not it really solves the problem.

This particular formulation of the creative process is regarded only as rough description. The stages may not all occur in every particular creation.

Objectives of the Study

1. To study the inter-correlations between the dimensions of creativity, and between dimensions of creativity and total creativity.
2. To study the dimensions of creativity among secondary school teachers and find out the difference among them with respect to three demographic variables: sex, locality and age.

Hypotheses of the Study

1. There will be no significant relationship among the three dimensions of creativity, and between dimensions of creativity and total creativity among the selected secondary school teachers.
2. There is no significant difference within the gender (male and female), locality (urban and rural) and age group (below and above 40 years of age) of secondary school teachers in possession of creativity.

Methodology

Sample of the Study

For the study, a stratified random sample of 500 secondary school teachers out of 700 sample data collected from different organizations was taken. In order to have

a representative sample of the secondary school teachers, the investigator took necessary care to include teachers belonging to different demographic variables like sex, locality and age in the present sample. The present investigation comes under the category of 'time-specific' proximal research. The aim of the study is to gain an in-depth understanding of creativity among secondary school teachers of Visakhapatnam district.

Tool Used:

The tool CDAB, which is known as Creative Dimensions Assessment Battery (Form of Self Assessment) constructed by Undurthy Laxminarayana (1988) was selected as the instrument to measure 'Creativity'. The reason for the selection of the revised version of this test was that it was specifically designed to measure the components of creativity. The tool consists of 25 positive items with a reliability of 0.76 and validity of 0.87.

Design of the Study

S.No	Name of the Variable	Description	Category	Sample	Total
01.	Demographic variable- I	Sex	Male	299	500
			Female	201	
02.	Demographic variable- II	Locality	Urban	325	500
			Rural	175	
03.	Demographic variable- III	Age	< 40 years	222	500
			> 40 years	278	

Nature & distribution of scores – creativity

Skewness of distribution of scores of dimensions of CDAB

S.No.	Dimensions	AM	Median	SD	SK	Ku
01.	Flexibility	48.2	49	5.86	-0.72	0.92
02.	Originality	31.5	31	4.61	-0.41	0.09
03.	Fluency	18.9	19	3.70	0.21	-1.02

Regarding the dimensions of CDAB, the magnitudes are negligible and hence, the distribution tends to normality.

Verification of First Hypothesis & Interpretation

The first hypothesis of the study was that there will be no significant relationship among the three dimensions of creativity, and between dimensions of creativity and total creativity among the selected secondary school teachers. To test the hypothesis analysis was done and the findings thus computed have been presented in table 1.

Table 1: Showing significance of 'r' among dimensions of Creativity

S.No.	Dimension	N	df	r - value
01.	Flexibility	500	498	0.237*
	Originality			
02.	Flexibility	500	498	0.612*
	Fluency			
03.	Originality	500	498	0.017
	Fluency			

*Significant at 0.01 level.

Perusal of the table shows that there is a significant, positive relationship between flexibility and originality, and flexibility and fluency. Hence, the part of hypothesis, i.e. "there will be no significant relationship between the two dimensions of creativity (flexibility and originality and flexibility and fluency)" is rejected.

Very strangely there existed no significant relationship (0.017) between originality and fluency. Hence, the part of the hypothesis "there will be no significant relationship between the two dimensions of creativity (originality and fluency)" is retained or accepted.

Table 2: Showing significance of 'r' between dimensions of Creativity and Total Creativity

S.No.	Dimension	N	df	r - value
01.	Flexibility	500	498	0.87*
	Total Creativity			
02.	Originality	500	498	0.56*
	Total Creativity			
03.	Fluency	500	498	0.70*
	Total Creativity			

*Significant at 0.01 level.

Perusal of the table establishes that there exists significant, positive relationship between the dimensions of creativity and total creativity. Hence, the part of the hypothesis "there will be no significant relationship between the dimensions of creativity and total creativity among selected secondary school teachers" is rejected.

It is found that there is substantial and significant inter-correlation between the dimensions of creativity as assessed by secondary school teachers. This indicates that flexible thinkers are fluent and original in their thought, speech and action. Fluency and originality occupy second and third places respectively in being significant as assessed by selected secondary school teachers (as assessed by them). These results substantiate the relationship between the three dimensions of creativity.

Verification of Second Hypothesis & Interpretation

The second hypothesis states that "there is no significant difference within the gender (male and female), locality (urban and rural) and age group (below and above 40 years of age) of secondary school teachers in possession of creativity."

Table 3: Showing significance of difference of Means between teachers with their demographic variables in possession of Creativity

S.No.	Category	AM	SD	N	df	t-value
01.	Male teachers	96.70	10.48	299	498	1.713
	Female teachers	95.07	8.37	201		
02.	Urban teachers	95.09	10.60	325	498	1.31
	Rural teachers	96.54	9.33	175		
03.	Teachers<40 years	96.11	9.30	222	498	0.060
	Teachers>40 years	96.05	10.13	278		

Perusal of the table depicts that the t-value is found to be not significant between male & female teachers, urban & rural teachers and teachers with below & above 40 years of age and hence the above hypothesis is accepted.

This second hypothesis is further split into three parts for the convenience of verification in respect of all the three dimensions of creativity – flexibility, originality and fluency as mentioned below. The hypothesis is verified and the t-values between demographic variables and the three dimensions of creativity are shown below.

Table 3: Showing values of 't' between Male and Female Teachers in possession of Creativity (Dimension wise)

S.No.	Dimensions	Category	AM	SD	N	df	t-value
01.	Flexibility	Male	47.66	5.89	299	498	1.560
		Female	46.78	5.13	201		
		Urban	46.70	5.99	325	498	1.461
		Rural	47.60	5.44	175		
		< 40yrs	47.49	5.27	222	498	0.549
		> 40yrs	47.19	5.90	278		
02.	Originality	Male	30.86	4.16	299	498	0.870
		Female	30.49	4.09	201		
		Urban	30.47	4.57	325	498	0.764
		Rural	30.83	3.92	175		
		< 40yrs	30.78	4.01	222	498	0.215
		> 40yrs	30.69	4.23	278		
03.	Fluency	Male	18.18	3.29	299	498	1.171
		Female	17.80	3.10	201		
		Urban	17.93	3.27	325	498	0.464
		Rural	18.09	3.20	175		
		< 40yrs	17.84	3.11	222	498	1.050
		> 40yrs	18.17	3.30	278		

Perusal of the table indicates that the t-values are found to be not significant between male and female teachers, urban and rural teachers and teachers below and above 40 years of age with regard to flexibility, originality and fluency. As the t-values are not significant, the above mentioned second hypothesis is accepted.

Conclusion

Gender, locality and age do not significantly affect the creativity among secondary teachers. Hence any teacher can develop creative skills and impart education creatively. They need techniques that stimulate curiosity and raise self esteem and confidence. Teaching with creativity include all the characteristics of good teaching – including high motivation, high expectations, the ability to communicate and listen and the ability to interact, engage and inspire. They must recognize when encouragement is needed and confidence threatened. The effect of teachers to implement creative strategies and foster creative activity in the class room is an essential part of pedagogy. Therefore some incentives, feedback, appreciation should be given by authorities to the highly creative teachers. They should be given some weightage in promotions also. Low-creative teachers will adversely affect thousands of students thus damage the educative process. They need to undergo some counseling or attend refresher courses.

References

- Gupta, A. K. (1980). *A Study of Classroom Teaching Behaviour and Creativity*, Light and Cife publishers, New Delhi.
- Barron, F. (1963). *Creativity and Psychological Health*, Princeton, N.J. Van Nostrand, New Jersey.
- Bhanu Deepthi, U. (2005). "Novel creative strategies to Dart into the minds of hard-to-reach students", paper presented at UGC sponsored national seminar, THENI Madhurai.
- Foster, J. (1971). *Creativity and Teacher*, Mc Millan Co. New York.
- Getzels, J.W., & Jackson, P.W. (1962). *Creativity and Intelligence*, John Willy and Sons Inc., London and New York.
- Guilford, J.P. (1967). "Creativity-yesterday, today and tomorrow", *Journal of Creative Behaviour*.

- Judith, L., Mc Elvain, L.N., Fretwell, R.B., & Lewis. (1972). "Relationship between creativity and teacher variability". In Gowan, George and Torrance, E.P. (Ed.), *Creativity: Its Educational Implications*.
- Laxminarayana, U. (1988). "A study of creativity in relation to teaching and research abilities", Ph.D. Education, Andhra University, Visakhapatnam.
- Passi, B.K. (1972). "An exploratory study of creativity and its relationship with intelligence and achievement in school subjects at higher secondary stage", Ph.D. Education., Punjab University.
- Torrance, E.P. (1962). *Guiding Creative Talent*, Englewood Cliffs, Prentice Hall Inc., New Jersey.
- Wallace, M., & Kogan, N. (1965). *Modes of Thinking in Young Children*, Holt Rinehart and Winston Inc., New York.

References

065	Gupta, A.K. (1980). <i>A Study of Creativity in Teaching</i> , New Delhi.
066	Gowan, George and Torrance, E.P. (Eds.). <i>Creativity: Its Educational Implications</i> , Englewood Cliffs, New Jersey.
067	Laxminarayana, U. (1988). <i>A study of creativity in relation to teaching and research abilities</i> , Ph.D. Education, Andhra University, Visakhapatnam.
068	Passi, B.K. (1972). <i>An exploratory study of creativity and its relationship with intelligence and achievement in school subjects at higher secondary stage</i> , Ph.D. Education., Punjab University.
069	Torrance, E.P. (1962). <i>Guiding Creative Talent</i> , Englewood Cliffs, Prentice Hall Inc., New Jersey.
070	Wallace, M., & Kogan, N. (1965). <i>Modes of Thinking in Young Children</i> , Holt Rinehart and Winston Inc., New York.