



The Relationship between Socio-Economic Status and Scientific Creativity of Scheduled Caste Students

KEYWORDS

Dissatisfaction to Satisfaction, Aesthetic sense, Scientific Creativity

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ABSTRACT

Creativity is journey of human being's dissatisfaction to satisfaction. When we feel something lack, then we want to reform the thing or situation. Why we think so? What works behind this? What is the origin of creative work? I think aesthetic sense is a main cause of Creativity. Every creative work is a reflection of human mind and aesthetic sense. Aesthetic sense is related with beauty. Beauty of world is depends upon beauty of mind because every beautiful creation is product of mind, and mind does so when it feel dissatisfaction and hunger to find something new, highly creative people can do this type of task. Artists, musician, scientists do inventions due to their aesthetic sense. In supporting my view I quote "Every day is an opportunity to be creative – the canvas is your mind, the brushes and colors are your thoughts and feelings, the panorama is your story, the complete picture is a work of art called..." (Inner space) The objectives of study were: (1) to find out the relationship between scientific creativity and the various socio-economic factors of scheduled caste students. (2) To find out the relationship between creative potential of scheduled caste students and various demographic variables. (3) To evaluate the differences in scientific creativity on the basis of gender, residential areas, type of family, caste category, parents occupation, parents education, family income and academic stream of post graduate students of scheduled caste. The hypotheses of study were: There is no significant difference in the creative potential of scheduled caste students based upon gender, residential areas, type of family, caste category, parent's occupation, parent's education, family income and academic stream. The Survey Method was used. 300 post graduate scheduled caste students were consisted as a sample. The sample was selected randomly Method. Scientific Creativity Test by Dr. K S Mrshra (1986) and personal inventory (self designed with the help of supervisor) were used to collect the data. The data were analyzed using Mean, SD, t-test and F – test. Scientific creativity is assessed on the basis of fluency, flexibility and originality. The findings of study were: (1) there is highly significant difference in scientific creativity (fluency, flexibility and originality) of male and female, rural and Urban, SC1 and SC2. There positive relationship is found among parent's occupation, parent's education, family income, academic stream and scientific Creativity. Hence there is strong relationship is found between scientific creativity and socio-economic factors.

INTRODUCTION

Creativity is journey of human being's dissatisfaction to satisfaction. Why we feel dissatisfaction? The answer is, when we feel something lack, when we want to reform the thing or situation. Why we think so? What works behind this? What is the origin of creative work? I think aesthetic sense is a main cause of Creativity. Every creative work is a reflection of human mind and aesthetic sense. Aesthetic sense is related with beauty. Beauty of world is depends upon beauty of mind because every beautiful creation is product of mind, and mind does not so when it feel dissatisfaction and hunger to find something new, highly creative people can do this type of task, they show their aesthetic ability. Artists, musician, scientists do inventions due to their aesthetic sense. They want to change, every change come out because of generation of ideas. When we feel lack or necessary of something, the process of thinking starts to create new things and open the new way to solve the problems. It is well known proverb 'necessary is a mother of invention'. It is started from the Stone Age, they used unstructured stone to kill the animal and to cut the tree and to save themselves from wild animal. He ate raw meat before the discovery of fire, though it was not due to creative thinking but after that he starts thinking.

Creativity is victory of an individual on crucial situation. It is a journey human mind from stone weapon to Atom bomb and Bo force, from earthen lamp to tube light, man found victory in every field of life. All discoveries, inventions and innovation are the result of effort done by the creative people. They are actually the producer of this beautiful world. The world became family with their efforts. We can see the

world at home by television, which creates the satellite; television cameras etc. were creative genius. Now the world is moving on fast track, we can finish the journey in short time from one place to another place with the help of train, airplane etc. These are remarkable presents to the world. It is story of man's magnificent creative capacities. Behind every civilized act or product, there is nothing more than creative Brain. As Karl Brandt has said, "Man" brain is, after all, the greatest natural resource. Michelangelo Buonarroti (1475-1564), Italian Renaissance artist stated, "A man paints with his brains and not with his hands." And it is stated that "Every day is an opportunity to be creative- the canvas is your mind, the brushes and colors are your thoughts and feelings, the panorama is your story, the complete picture is a work of art called....." (Innerspace.) It means Brain is store of creative Action.

SCIENTIFIC CREATIVITY

Scientific creativity means creative work in sphere of science. All inventions, innovations, discoveries in science are considering scientific creativity. They think differently from common man and open new ways of living and survive. Only few people come in category Newton, A P J Abdul kalam, Darvine etc gave their matchless creation to the world. In science, creativity is made by breaking the rules. Mary Lou Cook, has put it right, "Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes, and having fun." But what's interesting about Einstein and Picasso, and other highly creative people, is that they can't seem to follow their discoveries through to the logical conclusions. Picasso never crossed the Rubicon and entered into abstract expressionism. Einstein didn't be-

lieve in quantum mechanics as the final atomic theory, or in the most spectacular consequence of general relativity, the black hole. It seems that genius burns brightly for a while and then burns out. The young revolutionary becomes conservative. It means the creative persons do the task in different from common man.

Statement of the Problem

'CREATIVE POTENTIAL OF SCHEDULED CASTE STUDENTS IN RELATION TO SOCIO- DEMOGRAPHIC VARIABLES'

Objectives:

- To examine the socio-economic factors and the demographic variables of scheduled caste students.
- To study the scientific creativity amongst scheduled caste students based upon various socio-economic factors.
- To ascertain the relationship between scientific creativity and the various socio-economic factors of scheduled caste students.
- To find out the relationship between scientific creativity and the diverse demographic variables of scheduled caste students.

Hypotheses:

1. There is no significant difference in the scientific creativity of scheduled caste students based upon gender.
2. There is no significant difference in the scientific creativity of scheduled caste students based upon residential area.
3. There is no significant difference in the scientific creativity of scheduled caste students based upon type of family.
4. There is no significant difference in the scientific creativity of scheduled caste students based upon caste category.
5. There is no significant difference in the scientific creativity of scheduled caste students based upon mother's occupation.
6. There is no significant difference in the scientific creativity of scheduled caste students based upon father's occupation.
7. There is no significant difference in the scientific creativity of scheduled caste students based upon father's education level.
8. There is no significant difference in the scientific creativity of scheduled caste students based upon mother's education level.
9. There is no significant difference in the scientific creativity of scheduled caste students based upon family income level.
10. There is no significant difference in the scientific creativity of scheduled caste students based upon academic stream.

REVIEW OF RELATED LITERATURE

This ongoing research acknowledged the availability vast literature on this specific area. Most of the existing literature has been gone through, reviewed and analyzed with reference to the theme of this study. This chapter divided into different section as follow:

Sex and Creativity

On this aspect, the finding of about six dozen studies was collected and reported in this review. Of these, Passi, B.K. (1972), Bedi, R.K. (1974), Singh, R.(1975), Rawat, M.S., and Garg, K.K.(1977), Arora, G.L. (1978), and Jarial, G.S. (1981) found that the female students were significantly superior to the male students on verbal creativity. Hussain, M.G. (1974), found that the female students were superior to the male students in originality. No significant difference were found between the male and the female students with respect to verbal creativity--- Raina, V.K. (1970), Gakhar, S. (1974) Gupta, K.K. (1988), Gautam, S. (1992), Singh, R.(1992) and Vohra, I.N.(1975) found that girls and boys of primary grades did not differ significantly on non-verbal creativity

Residence and Creativity

As early as 1969, a study was conducted by Aaron, P.G., Marihal and Malatesha, A.N. where they explored the difference on creativity among the rural and the urban students. These investigators concluded that there existed no significant difference in creativity among students belonging to rural and urban areas. Sehgal, K. (1978) also reported similar findings. In a recent study Patwardhan (1994) found that women coming from rural and urban areas fell apart on concept formation, reasoning decision- making and problem solving' but were not different on creative thinking. On the other hand, sharma, K.P. (1974), Gupta, K.K.(1988), and Afshan (1991) reported that rural students were more creative than the urban students. Studies conducted by Passi, B.K. (1972), Singh, C.(1978), Srivastava, R.(1978) reported that the urban students were more creative than their rural counterparts. More than half the studies have reported the superiority of the urban students over the rural students. Local and creativity results are quite interesting. The rural students excelled on some creative tasks where as the urban students excelled their rural counterparts on some other dimensions of creativity.

Socio-Economic Status and Creativity

Sharma, M. (1980) Ahmed, S (1980), Sharma, A.K. and Jarial, G.S.(1980), Singh, A.K. (1980), Jarial, G.S.(1981), Srivastava, B(1982), Shir, B. (1988), and Singh, K.Pl.(1988) studied the relationship of creativity and socio-economic status. About 75% of these studies have reported that creatives come from high SES--Vohra, I.N. (1975), Rawat, M.S. and Agarwal (1977), Sharma, A.L.(1986), and Kumar, G. (1989). Comparing the students coming from small average and large families Jarial G.S. (1981) found that the students of small families were superior in fluency, flexibility and composite creativity, when compared to the students of average and large families. On the other hand some researchers reported that there exists no significant difference in the creativity of students coming from high, average and low SES. From these studies, it may be concluded that the SES as a correlate plays differentiated roles which are unpredictable due to the presence of uncontrolled and interacting situations variables. Multi-site case studies may be undertaken for solving such why-and how questions of creativity and SES. We have to visualize and study new intervening variable capable of proposing answers.

Research Methodology

To achieve the objectives of the study post graduate scheduled caste students of Haryana were selected as population. But it is impossible to reach every student. By considering this fact at first total four universities of Haryana were selected. 300 post graduate scheduled caste students were comprised from selected universities (Kurukshetra University Kurukshetra-75, Maharishi Dayanand University Rohtak-75, Ch. Devi Lal University Siras-75, Guru Jambheshwar University Hissar-75) by random sampling method. To assess the creative potential in science scientific creativity test by Dr. K S Mishra (1986) and Personal Inventory (self designed with the help of supervisor) were used. Survey method was used to collect the data. The data was analyzed using mean, SD, t-test and F-test.

Analytical Procedures

To answer the hypothesis 1-2, (There is no significant difference in the creative potential of scheduled caste students based upon gender and residential area). It is evident from table-1 that t-value of male and female in scientific fluency, flexibility and originality comes out to be 28.28, 32.09 and 6.73 which are significance at 0.05 level of significance. Male are more creative in fluency but female performed better in flexibility and originality dimension in scientific creativity. Hence there is positive relationship is found between sex differences and scientific creativity.

With regard to residential area table-1 further discloses that

t-value of rural and urban in scientific fluency, flexibility and originality comes out to be 37.6, 3.64 and 8.47 which are significance at 0.05 level of significance. Hence there is significance difference is found between rural and urban. Urban students are more creative in scientific originality, but rural students gave their better performance in scientific fluency and flexibility.

To answer the hypothesis 3-4, (There is no significant difference in the creative potential of scheduled caste students based upon family type and caste category). It is evident from table-1 that t-value of joint and nuclear families' students in scientific fluency and flexibility comes out to be 1.9 and 0.9 which are not significance at 0.05 level of significance. Hence there exists a negative relationship. Table-1 further discloses that t-value of joint and nuclear families' students in scientific originality comes out to be 9.66 appeared to be significance at 0.05 level of significance. Hence there is positive relationship is found. Nuclear families' students are found more creative in originality but in fluency and flexibility were not found significant difference between nuclear and joint families' students in scientific creativity.

Table-1 further discloses that t-value of SC 1 and SC 2 in scientific fluency, flexibility and originality comes out to be 4.25, 16.94 and 7.04 which are significance at 0.05 level of significance. Hence there is significant difference was found between SC 1 and SC 2 students in fluency, flexibility and originality dimension. SC 2 students are more creative in scientific fluency and originality than SC 1 students but SC 1 students were performed better inflexibility dimension.

To answer the hypothesis 5-6-7-8 (There is no significant difference in the creative potential of scheduled caste students based upon parent's education and occupation). It is evident from table-1 that t-value of 7.74 and 11.17 obtained in respect of mother's occupation in scientific flexibility and originality dimensions which is significance at 0.05 level of significance. Hence there exists a positive relationship. Those students are found more creative in originality whose mothers are in-service but whose mothers are house wife those students are found better in flexibility. Table-1 further discloses that t-value obtained in respect of mother's occupation in scientific fluency comes out to be 1.63 appeared to be not significance at 0.05 level of significance. Hence there is opposite relationship is found. There is no significant difference is found based upon mother's occupation in fluency dimension.

Table-1 further discloses that F-value obtained in respect of father's occupation in scientific fluency and flexibility comes out to be 4.33 and 42.55 which is significance at 0.05 level of significance. Hence there is significance difference is found on the basis of father occupation. Those students are more creative in scientific flexibility whose fathers are in Pvt. Job. On the other hand business men's children are better performer in scientific fluency.

It is evident from table-2 that t-value of 8.95, 19.90 and 32.02 obtained in respect of mother's education in scientific fluency and elaboration dimensions which is significance at 0.05 level of significance. Hence there is positive relationship is found between mother's education and scientific creativity. Those students are found more creative in fluency, flexibility and originality whose mothers are post graduate than graduate, 10+2 and illiterate.

Table-2 further discloses that F-value obtained in respect of father's Education in scientific fluency, flexibility, and originality comes out to be 6.58, 14.82 and 8.02 which is highly significance at 0.05 level of significance. Hence there is significance difference is found on the basis of father's education in scientific fluency, flexibility, and originality. Those students are more creative in scientific fluency and originality whose

fathers are Post graduate than others. Hence there is positive relationship is found between parents' education and scientific creativity.

To answer the hypothesis 9-10 (There is no significant difference in the creative potential of scheduled caste students based upon family income and academic stream.) It is evident from table-3 that t-value of 8.00, and 5.79 obtained in respect of family Income in scientific fluency and flexibility dimensions which is significance at 0.05 level of significance. Hence there is positive relationship is found between family income and scientific creativity. Table-3 further discloses that t-value obtained in respect of family income in scientific originality comes out to be 0.37 appeared to be not significance at 0.05 level of significance. Hence there is opposite relationship is found between scientific creativity and family Income. Those students are found more creative in flexibility whose family's Income is above 20,000 but in fluency those students are found more creative whose family's Income is 10000-20,000 than low income families.

Table-3 further discloses that F-value obtained in respect of Academic stream in scientific fluency, flexibility, elaboration and originality comes out to be 81.28, 115.64 and 425.25 which is highly significance at 0.05 level of significance. Hence there is significance difference is found on the basis of academic stream. Science students are more creative in scientific fluency flexibility and originality than arts and commerce students in scientific creativity.

Results

After the analysis of collected data it was found that there is positive relationship is found among gender, residential area, family type, caste category, mother occupation, mother education, family's income and scientific creativity in fluency, flexibility and originality dimensions. Hence socio-economic status and scientific creativity mostly found positive related to each other.

Educational Implications: -

Creative potential of scheduled caste student is social as well emotional topic with enormous implication for education. This study shows that what was the loss to society as well county, of exclusion to this section from education, society and economic growth. This study presents the actual place of this section in past in society and in the heart of upper society. The conclusion of this study is that socio-demographic variables i.e. gender, residential area, caste category, social environment, parent's occupation and education, family income, academic etc. play an impotent role to foster creativity among students. It is very beneficial for students, parents, and teachers they will get knowledge how we can enhance creative potential among scheduled caste students.

This study suggests the teachers, parents and educational planners should keep these results in view while framing the curricula in various subjects. They must provide such opportunities and co genial environment at school and at home which helps rather than hinders the development of creative potential among different sections of the society, scheduled caste Students should not be discriminated on the basis of their sex, residence, caste and economic condition. Rather they should be encouraged to bring out their innate potentialities in various fields. This study will prepare the people to think deeply about women education. In 21 century why we need women empowerment.

The present study aims at exploring the myth that the scheduled castes do not have innate potentials in comparison to non scheduled caste. Hence the study has a special significance as its findings shall have a direct bearing on our social attitude, especially towards the low castes.

Table -1

Variables N		Fluency		Flexibility		Originality		
		Mean	t-value	Mean	t-value	Mean	t-value	
Gender	Male	122	47.76	28.28*	3.45	32.09*	5.18	6.73*
	Female	178	14.67		41.64		13.06	
Residence	Rural	170	46.42	37.6*	14.69	3.64*	5.11	8.47
	Urban	130	13.33		4.73		14.94	
Family type	Nuclear	172	15.99	1.9	3.13	0.9	14.12	9.66*
	Joint	128	13.76		2.23		2.81	
Caste category	SC 1	125	11.6	4.25*	6.37	16.94*	5.03	7.04*
	SC 2	175	16.57		1.31		13.27	
Mother's Occupation	H. Wife	268	14.21	1.63	12.31	7.74*	5.09	11.17*
	Iservice	62	16.53		1.31		20.96	
Father's occupation	Laborer	138	12.87	4.33*	2.31	42.55*	46.9	1.66
	Govt Job	121	14.25		4.9		44.95	
	Pvt Job	27	14.3		16.7		47.03	
	Business	14	23.02		10.98		50.52	

* Significant at 0.05 levels of significance

Table -2 Parent's Education and scientific creativity

Dimensions	Respondents	Mother's Education			Father's Education			
		N	Mean	F-value	Respondents	N	Mean	F-value
Fluency	Illiterate	49	6.6	8.95*	Illiterate	32	13.47	6.58*
	Up to 10+2	204	15.06		Up to 10+2	174	13.61	
	Grad.	26	17.96		Grad.	43	16.45	
	P.G.	21	18.73		P.G.	41	17	
flexibility	Illiterate	49	3.24	19.90	Illiterate	32	5.45	14.82*
	Up to 10+2	204	5.58		Up to 10+2	174	4.3	
	Grad.	26	6.89		Grad.	43	7.8	
	P.G.	21	7.95		P.G.	41	23.66	
Originality	Illiterate	49	6.02	32.02*	Illiterate	32	46.9	8.02*
	Up to 10+2	204	6.05		Up to 10+2	174	44.95	
	Grad.	26	21.23		Grad.	43	47.03	
	P.G.	21	22.28		P.G.	41	50.52	

* Significant at 0.05 levels of significance

Table-3 Family income, Academic stream and scientific creativity

Dimensions	Respondents	Family income			Academic stream			
		N	Mean	F-value	Respondents	N	Mean	F-value
Fluency	Up to 10000	150	12.65	8*	science	78	23.92	81.28*
	10000-20000	60	21.2		Arts	201	8.09	
	Above 20000	90	18.6		Commerce	21	7.24	
Flexibility	Up to 10000	150	4.2	5.79*	science	78	13.14	115.64*
	10000-20000	60	7.48		Arts	201	7.42	
	Above 20000	90	8.79		Commerce	21	10.54	
Originality	Up to 10000	150	38.03	0.37	science	78	34.08	425.28*
	10000-20000	60	38.93		Arts	201	25.24	
	Above 20000	90	39.12		Commerce	21	8.94	

* Significant at 0.05 levels of significance

REFERENCE

Ali Asgar (2003). Bharat me Samperdayakta: Itihas aur Anubhava. Itihas Bodh Parkashan, B-239, Chandrasekhar Ajad Nagar, Ilaahabad-211004. | Ambedkar B.R. (1948). The untouchables, who were they and why they become untouchables. Amrit Book co. New Delhi. | Anderson, H.H. (1959). "Creativity and its cultivation." Haiper and Row Publication, New York. | Bharti Kawanl (2004). Dalit Vimarsh ki Bhumika. Itihas Bodh Parkashan, B-239, Chandrasekhar Ajad Nagar, Ilaahabad-211004. | Boden Margrate (2006). Creativity in Triplicate. Article available at <http://www.sussex.ac.uk/cetmailto:m.a.boden@sussex.ac.uk>? | Boden Margrate (1990). The creative mind. Available at <http://laterallaction.com/article/creativityandinnovation>. | Chandra Subhas (2006). Ambedkar Se Dosti. Itihas Bodh Parkashan, B-239, Chandrasekhar Ajad Nagar, Ilaahabad-211004. | DiLiello, Trudy C. and Houghton, Jeffery D (2008). Creative Potential and Practiced Creativity: Identifying Untapped Creativity in Organizations. Creativity and Innovation Management, Vol. 17, Issue 1, pp. 37-46, Available at SSRN: <http://ssrn.com/abstract=1095458> or DOI: 10.1111/j.1467-8691.2007.00464. | Edwards, A. (2003, September 16). Fun with fusion: Freshman's nuclear fusion reactor has USU physics faculty in awe. Retrieved October 27, 2003, from <http://deseretnews.com/dn/view/0,1249,510054502,00.html> | Ginsberg, H. (1972). The Myth of the Deprived Child, New Jersey: Prentice Hall. | Guilford, J.P. (1950). Creativity, American Psychology, Vol. 5, pp. 444-445, | Guilford, J.P. and Benjamin Fruchter, (1978). Fundamental Statistic in Psychology and Education, McGraw hill, Kogokusta. | Hallman R.J. (1967). "The Necessary and Sufficient Confidence of Creativity" in J.C. Gowan, G.D. Demos and E.P. Torrance (Eds) Creativity and its Implications, John Wiley and Sons, Inc. London. | Harry Slochower (1961). Man's creative potential. Voll.-XIV, No.31 Available at SSRN: <http://ssrn.com/abstract=1095458> | Hutton H.J. (1952). Caste in India, Bombay, Oxford University Press. | Mackinnon, D.W. (1965). "Personality Realization of Creative Potential", American Psychology, Vol. 20, pp. 273-281. | Naiman Linda (2006-07). 'What is Creativity?' article available at www.creativityatwork.com. | Raj Kishor (2000). Harijan Se Dalit. Vani Parkashan, 21-A, Dariyaganj, New Delhi-110002. | Rollo May (2006-07). The Courage to Create. Article available at www.creativityatwork.com. | Srinivas, M.N. (1970.). Caste in Modern India and Other Essays, Bombay: Asia Publishing House. | Sternberg, R. J. & Lubart, T. I. (1995). Defying the crowd: Cultivating creativity in a culture of conformity. New York: Free Press. | Sternberg, R. J. (2001). "What is the common thread of creativity? Its dialectical relation to intelligence and wisdom." American Psychologist, Voll.-56, pp360-362. | Taylor, F.W. (Ed.) (1964). Creativity: Progress and Potential, New York: McGraw-Hill. | Taylor, A. (1975). "A Retrospective View of creativity Investigation", in I.A. Taylor and J.W. Getzels (Eds), Perspectives in Creativity. Aldin Chicago. | Thorat Sukhdev (2005). Niji Khsetra me Arkshan: Kyon aur Kaise Itihas Bodh Parkashan, B-239, Chandrasekhar Ajad Nagar, Ilaahabad-211004. | Torrance, E.P. (1969). "Creative Potential of Disadvantaged Children and Youth", Gifted Child Quarterly, Vol. XIII, pp. 71-81. | Torrance, E.Paul. (1972). "Can we teach children to think creatively? Journal creative behavior. Vol.-6, No.-2, pp.-114-143. | Torrance. E. P. (1963). Education and Creative Potential, Minneapolis: University of Minnesota Press. | Weisberg, R.W. (1986). Creativity: Genius and others myths. New York: freeman. |