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CREATIVITY OF SENIOR SECONDARY SCHOOL STUDENTS IN RELATION TO THEIR GENDER AND INTELLIGENCE

Dr. Kamlesh Dhull

Assistant Professor, Vaish College of Education, Rohtak. E-mail: kamleshdhull10@gmail.com

Abstract :

The present study is an attempt to find out the impact of intelligence on creativity of senior secondary school students. A sample of 220 senior secondary school students is taken by random sampling technique from Rohtak district. Mean, Standard Deviation and 't' test are used to analyse the data. Creativity Scale development by Baquer Mehdi and General Mental Ability Test developed by S.S. Jalota are used to collect the data. The findings of the showed that Female students had higher fluency, flexibility, originality and total creativity than male students and high intelligent students had higher fluency, flexibility, originality and total creativity than the low intelligent students.

Key words: *Creativity, intelligence, fluency, flexibility, originality, gender*

Introduction :

Creativity means guidance to solve problem situation in an original way. Creativity could be understood as the urge of capacity for producing something new in the realm of ideas, concepts things or art creations. Over centuries the Indian philosophers have given deep and abiding thought to the theoretical and philosophical aspect of creativity. They described this phenomenon as 'navana comes has halini" i.e. man is creative in his ability to create new forms. It is very important process for the progress and major advance in very field. All the advances are made as a result of new ideas or creative process. It is the basis of all the social development & new inventions & discoveries in the field of science & technology. The creativity, so important concept, need greater attention. Without creative people we cannot invent, discover and advance in any field of knowledge. Man is a free agent (Swatantr Karta) and creativity functions with his nature with in human nature rests the capacity to go beyond. What is man, then? He is the bearer of the creative process." He is a unique representation of the universe in whom the unconscious creativity of nature becomes conscious creativity."

Radha Krishnan (1960) Heist (1968) rightly warned : if deplorable waste of human talent is to be prevented & it creatively gifted students are not to choose the paths of delinquency, mental illness, or at best a life of mediocrity and unrealized potentialities it becomes essential that serious attempts are made to identify creative talent. Creativity is

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one of the most highly valued qualities of human beings because creative acts affect enormously in all spheres of life. Creativity, at its highest level, has probably been as important as any human quality in changing history and in reshaping the world. It we are to survive in international competition, the most promising solution is for this nation to encourage and support the identification and development of highly creative persons. In educational system creativity in students is mostly neglected through badly required. As a word, creativity appears to be very charming to listen and to pronounce but as a psychological concept, it remains for away from the understanding of teachers, pupil-teachers & even teacher educators.

Hence, creativity is a multi-dimensional characteristic that is distributed differently among individuals, with the variables of problem-solving, fluency, flexibility, originality, inquisitiveness, and perseverance being the most important. It may be said that creative thought is described as the intentional manipulation of the world by the mind in order to generate new ideas and create novel patterns and relationships.

Intelligence

Intelligence, according to Alfred Binet, is the capacity to make choices or use common sense. According to Thorndike, intelligence is described as "one's ability to deal effectively with circumstances." 'Intelligence is the ability to respond to one's circumstances,' according to Jean Piaget. "Intelligence is the potential for flexible adjustment," says Cyril Burt. 'The global capacity to think rationally, act deliberately, and cope successfully with the environment,' according to David Wechsler (1977). The ability to reason, plan, solve problems, think abstractly, comprehend complex concepts, understand easily, and learn from experience is known as Intelligence. It's not just book expertise, a particular intellectual ability, or test-taking process.

As a result, intelligence is a means of behaving in a situation rather than a thing or an entity. In general, alertness to the present condition of life is a measure of intelligence. Intelligence also encompasses cognitive abilities such as observation, memory, imagination, vision, and logic. It also encompasses the opportunity to overcome real-life challenges. Intelligence is described as a person's mental or cognitive abilities that enable him to solve real-life problems and live a happy and contented life. Corroborate

Creativity and Intelligence

The relationship between intelligence and creativity has long been a subject of controversy. If one performs a critical theoretical analysis of the two, one must assume that they all come from the same domain and have almost identical interpretations in their hypotheses, suggesting that they may have a similar relationship. Elizabeth Andrews conducted a study on preschool children in 1930 and found that the correlation between intelligence and creativity tests was close to zero. However, other psychologists observed a strong association between intelligence and creativity in their experiments, varying from .2 to .3. However, Getzels and Jackson discovered that IQ scores and divergent reasoning were not statistically associated in their research.

Taking a comprehensive look at the research on this subject, we can deduce that, while intelligence and the creativity aspect of one's personality can each work separately, a certain degree of intelligence is a required pre-condition for

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good creative speech. An individual with below-average mental capacity, such as a moron or a fool, on the other hand, may be imaginative. However, in real life, we hardly come across those cases. Intelligence and Creativity are inextricably related. This is due to the fact that thought is neither strictly divergent nor purely convergent, but still includes aspects of both, which are engaged in the imaginative and analytical phase at the same time. As a result, to be considered artistic, an individual must possess a minimum degree of intelligence that is significantly higher than the average.

Review of Literature

Batey, Furhan and Safiullina (2010 revealed that when creativity was assessed in terms of achievement of self rating, personality variables were consistently predictive.**Nusbaum and Silvia (2011)** found that intelligence and creativity as essentially unrelated abilities, and many studies have found only modest correlation between them. **Clarke and Peter (2012)** found that by attending to relationships and focusing on a plurality of intellect this particular curriculum and pedagogy promotes transformative learning in students studying fine art. **Jha (2012)** depicted difference in creativity of the high school students of Ahmedabad with different levels of intelligence, self-concept and anxiety. **Dalal and Rani (2013)** revealed that there is significant relationship between Creativity and Intelligence of Senior Secondary Students. The result also revealed that intelligence of high creative students and low creative students of Govt. Senior secondary schools differ significantly. **Ghaffari, Sarmadi & Safari (2013)** showed that there was a significant relationship between creativity and emotional intelligence. **Karwowski, Dul and Gralewski et al. (2016)** conclude that although evidence concerning the threshold hypothesis on the creativity–intelligence relationship is mixed, the "necessary condition hypothesis" is clearly confirmed by the results of appropriate tests. **Arya and Maurya (2016)** found that there is no significant association between creativity and intelligence. **Hooda and Devi (2017)** examined relationship of creative thinking abilities with family environment and intelligence among senior secondary school students. They found no significant relationship between Fluency, Family environment and Intelligence of male and female students. **Lanawati and Catherine (2018)** showed significant indirect impact of emotional intelligence and creativity on academic achievement, mediated by personality. **Mohammadi, Moshkani and Shirdel (2019)** showed that there is a significant relationship between creativity and intelligence with wisdom and creativity, if a person gets higher score in creativity and intelligence with wisdom index will get higher score in wisdom.

Significance of the Study

There is no doubt that "creativity" exists in all children and that it is special to each individual. Any children have a deep desire to share their creativity. In others, it lurks under the surface, looking for a chance to emerge. Creativity thrives and flourishes when it is nurtured, but it dies and withers when it is suffocated. As a result, today's most pressing issue for schools is to investigate the aspect of creativity and how it is emphasized as part of education, as well as how it contributes to artistic expression among students. It also necessitates immediate attention to the development of innovative qualities, based on the premise that a learning society needs not only intellectually competent people, but also, and particularly, creative and constructive people in order to achieve the aim of sustainable development, not only in the realm of education, but also in the creativity of a rapidly evolving society. The primary

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role of education should be to recognize children's creative potentialities and to design instructional curricula and activities in such a way that their creative abilities are established and their talents are completely exploited. This is a difficult duty that teachers must do for the sake of the nation's development. With this foundation, the need for research into the relationship between intelligence and children's creativity seems to be critical. As a result, the issue is stated as follows:

Statement of the Problem

"Impact of Intelligence on Creativity of Senior Secondary School Students"

Objectives of the Study

1. To study and compare the creativity of senior secondary school students in relation to their gender.
2. To study and compare the creativity of senior secondary school students in relation to their intelligence.

Hypotheses

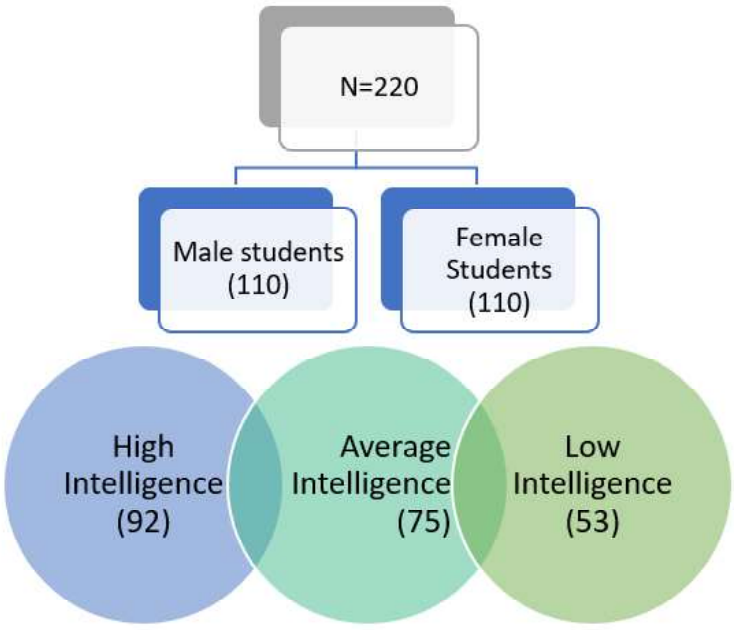
1. There is no significant difference in creativity among male and female senior secondary school students.
2. There is no significant difference in creativity of senior secondary school students having high intelligence and low intelligence.

Method

Keeping in view the nature of the study, descriptive research method has been used..

Sample of the Study

In the present study, 220 senior secondary school students of Rohtak district formed the sample of the study on the basis of Multi stage random sampling technique.



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Tools Used

- Creativity Scale development by **Baquer Mehdi**
- General Mental Ability Test developed by **S.S. Jalota**

Statistical Techniques Used

Mean, Standard deviation and 't' test were used to analyse the data.

Analysis of Data

The first objective of the study is to know the i**mpact of intelligence on creative thinking on students on the basis of gender**. The analysis is given in table 1 below:

Table 1: Means, S.Ds and 't' ratios of male and female students on creativity

Dimension of Creativity	Group	Number	Mean	S.D.	't' ratios
Fluency	Male students	110	36.16	9.45	4.563**
	Female students	110	42.44	11.23	
Flexibility	Male students	110	23.28	6.41	2.921**
	Female students	110	27.17	7.12	
Originality	Male students	110	8.57	4.12	3.012**
	Female students	110	11.25	5.67	
Total Creativity	Male students	110	68.01	19.13	7.263**
	Female students	110	80.86	18.28	

**Significant at 0.01 level

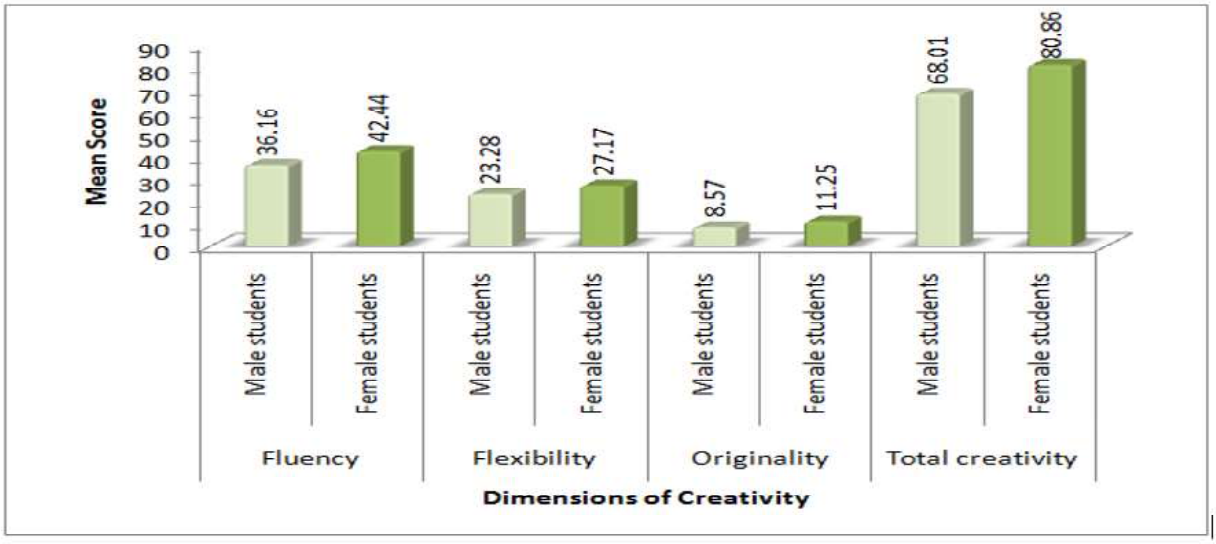

Fig. 1: Means ratios of male and female students on creativity

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From Table 1 it is evident that the 't'-value on the first dimension of creativity, i.e., fluency of male and female students is 4.563 which is significant at 0.01 level. It indicates that male and female senior secondary school students differ significantly on fluency. Further the mean scores reveal that female students (42.44) are found to be higher on fluency as compared to male students (36.16).

Next part of the table shows that the 't'-value on the second dimension of creativity, i.e., flexibility of male and female students is 2.921 which is significant at 0.01 level. It indicates that male and female senior secondary school students differ significantly on flexibility too. Further, the mean scores reveal that female students (27.17) are found to be higher on flexibility as compared to male students (23.28).

From next part of the Table, it is evident that the 't'-value on the third dimension of creativity, i.e., originality of male and female students is 3.012 which is significant at 0.01 level. It indicates that male and female senior secondary school students differ significantly on originality also. Further, the mean scores reveal that female students (11.25) are found to be higher on originality as compared to male students (8.57). It means that female students were found to have more originality in comparison to male students.

From last part of the Table, it is evident that the 't'-value on the total creativity of male and female is 7.263 which is significant at 0.01 level. It indicates that male and female senior secondary school students differ significantly on total creativity also. Further, the mean scores reveal that female students (80.86) are found to be higher on creativity as compared to male students (68.01). It means that female students were found to have more creative in comparison to male students.

It clearly follows that senior secondary school female students in Haryana schools are found to be much better than their counterpart male students on creativity parameters of Fluency, Flexibility and Originality and total creativity. Thus, the null hypothesis, i.e., "There is no significant difference in creativity (fluency, flexibility and originality) among male and female senior secondary school students" is not retained.

The second objective of the study is to know the **impact of intelligence on creative thinking on students on the basis of intelligence**. The analysis is given in table 2 below:

Table 2: Means, S.D.s and 't' ratios of students having high intelligence and low intelligence on creativity

Dimension of Creativity	Group	Number	Mean	S.D.	't' ratios
Fluency	Low intelligence	53	24.25	5.32	11.862**
	High intelligence	92	44.36	7.83	
Flexibility	Low intelligence	53	18.24	4.87	9.983*
	High intelligence	92	35.87	6.93	
Originality	Low intelligence	53	6.14	2.41	9.867**
	High intelligence	92	15.42	5.45	
Total Creativity	Low intelligence	53	48.63	12.73	13.983**
	High intelligence	92	95.65	20.73	

**Significant at 0.01 level

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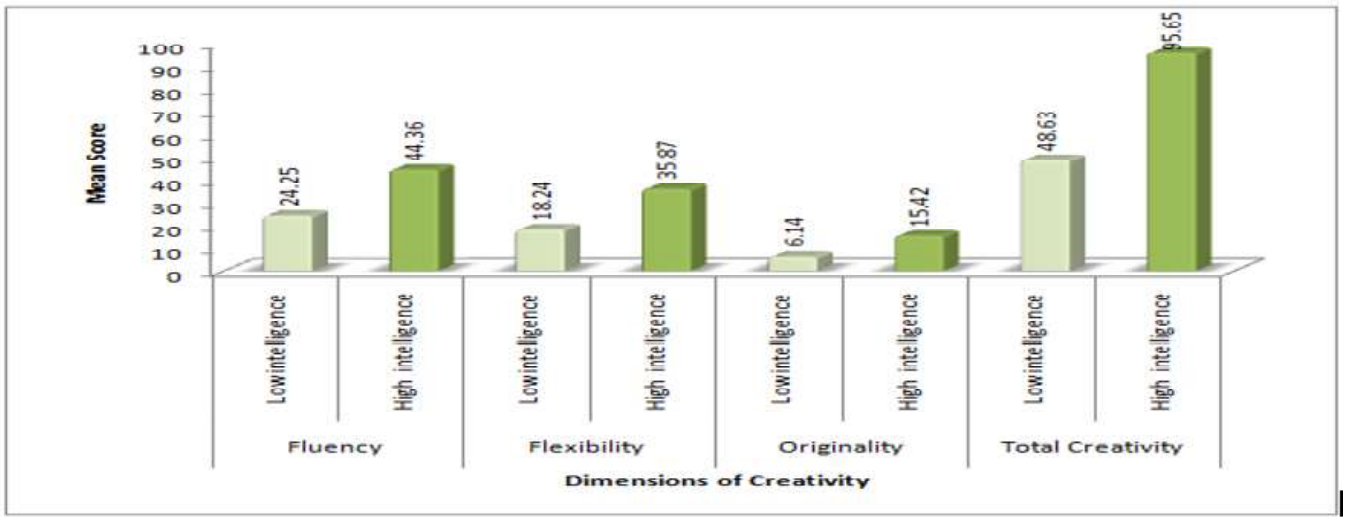

Fig. 2: Means ratios of students having high intelligence and low intelligence on creativity

Table 2 shows Means, S.D.s and 't' ratios of high intelligent students and low intelligent students. In the first dimension of creativity i.e. fluency, the mean score of high intelligent students (44.36) is higher than the mean score (24.25) of low intelligent students. The 't' ratio is 11.862 which is significant at 0.01 level. It indicates that high intelligent students have more fluency than low intelligent students.

In the second dimension of creativity i.e. flexibility, the mean score of high intelligent students is (35.87) which is higher than the means score (18.24) of low intelligent students. The 't' ratio is 9.983 which is significant at 0.01 level. It indicates that high intelligent students have more flexibility than the low intelligent students.

In the third dimension of creativity i.e. originality the mean score of high intelligent students is (15.42) which is more than the mean score (6.14) of low intelligent students. The 't' ratio is 9.867 which is significant at 0.01 level. It shows that high intelligent students and low intelligent students differ significantly on originality. It indicates that high intelligent students have more originality than low intelligent students.

On total creativity, the mean score of high intelligent students is (95.65) which is higher than the mean score (48.63) of low intelligent students. It shows that high intelligent students and low intelligent students differ significantly on creativity. It indicates that high intelligent students have more creativity than low intelligent students.

The results indicate that there is a significant difference among high intelligent students on flexibility, fluency, flexibility and total creativity. Hence the hypothesis that "There is no significant difference is creative thinking abilities of senior secondary school students having high intelligence and low intelligence" is not retained.

Major Findings

1. It is found that male and female students differ significantly on fluency, flexibility, originality and total creativity. Female students had higher fluency, flexibility, originality and total creativity than male students.

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2. It is found that high intelligent students and low intelligent students differ significantly on fluency, flexibility, originality and total creativity. High intelligent students had higher fluency, flexibility, originality and total creativity than the low intelligent students.

Conclusion and Implications

The study looked into the difference in male and female students on creative and also looked into relationship between creativity and intelligence of senior secondary school students. The students are evenly divided in terms of creativity on the basis of creativity test. It demonstrates that creativity is uniformly prevalent, and that every child possesses some level of creativity. It is the responsibility of parents and teachers to encourage imaginative development and to assist children in understanding divergent thinking and openly communicating their thoughts. They should have positive opportunities and feedback, as well as acknowledge the individual's artistic abilities. Psychologists and educators all around the world have been more hopeful in recent years. It is well recognized that good parental attention, good diet, early stimulus, and a stimulating atmosphere are all likely to enhance the capacity for creativity in children and aid in talent hunting and harnessing. A parallel analysis of creativity could be done on teaching models to promote creativity, and new teaching models could be created in relation to the creation of creative potentials.

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