

A Comparative Study of I.Q. and Creativity of Secondary School Students in North 24 Parganas District of West Bengal

Koushik Halder¹, Dr. Debashis Dhar², Dr. Udayaditya Bhattacharya³

¹Research Scholar, Department of Education, Jharkhand Rai University, Ranchi, Jharkhand, India

²Principal, Sanjay College of Education, Vill + P.O. – Brindabanchak, Purba Medinipur, West Bengal, Pin-721641, India

³Ex-principle, G.C.M.College of Educaion, New Barrackpur, West Bengal, India

Date of Submission: 25-12-2020

Date of Acceptance: 03-01-2021

ABSTRACT -- An IQ is a cumulative score obtained from a sequence of standardized assessments or subtests to measure human intelligence. Historically, IQ was a score obtained by dividing an individual's mental age score by the chronological age of the person, all expressed in terms of years and months, obtained by conducting an intelligence test. There are a number of independently conducted IQ assessments in use in the English-speaking world. The most widely used individual IQ test sequence is the Wechsler Adult Intelligence Scale (WAIS) for adults and the Wechsler Intelligence Scale for Children (WISC) for school-age test-takers.

Creativity means thinking to come up with original ideas in a new way. It expands our knowledge and experience from known to new. Their ability to organize perceptions and emotions is one of fluency, flexibility, originality, divergent thinking. Quality training and extensive creative expressions inspire and encourage creative thinking to make a substantial contribution to society. Therefore, the educational process should aim to develop children's creative skills.

The relationship between intelligence and creativity has been subject to empirical research for decades. Nevertheless, there is yet no consensus on how these constructs are related. One of the most prominent notions concerning the interplay between intelligence and creativity is the threshold hypothesis, which assumes that above-average intelligence represents a necessary condition for high-level creativity.

In this paper the research was performed on one hundred students (both male and female) of Class X, of rural and urban populations due representation. The study examined the IQ and Creativity of secondary school students in the North 24 Parganas Districts of West Bengal. Two

rural and two urban secondary schools were selected, and basic random sampling methods were used to choose students. In this paper researcher found that there exists no significant difference in the mean score in the I.Q. and Creativity of total students (rural + urban) students of secondary school students (total sample) of North 24 parganas district of West Bengal.

Key-words: IQ, Creativity, Secondary School Students.

I. INTRODUCTION:

IQ is an acronym for Intelligence Quotient. The IQ is a measurement of your intelligence and is expressed in a number. The IQ of a person can be determined by making an intelligence test taken by the participant. The average IQ is 100. You are smarter than the average person if you receive a score greater than 100, and a lower score means you are somewhat less smart. Historically, IQ was a score obtained by dividing an individual's mental age score by the chronological age of the person, all expressed in terms of years and months, obtained by conducting an intelligence test. There are a number of independently conducted IQ assessments in use in the English-speaking world. The most widely used individual IQ test sequence is the Wechsler Adult Intelligence Scale (WAIS) for adults and the Wechsler Intelligence Scale for Children (WISC) for school-age test-takers.

IQ scales are normally modified. IQ scales are normally modified. Although one standard deviation is 15 points, and two SDs are 30 points, and so on, this does not suggest that IQ-related mental ability is linear, so IQ 50 means half of IQ 100's cognitive ability. IQ points are not percentage points in particular. IQ scales are normally modified. Although one standard deviation is 15

points, and two SDs are 30 points, and so on, this does not suggest that IQ-related mental ability is linear, so IQ 50 means half of IQ 100's cognitive ability. IQ points are not percentage points in particular. IQ scores can differ to some degree for the same person on different IQ tests, so a person does not always belong to the same IQ score range each time the person is tested. While certain types of intelligence are commonly assumed to be assessed by IQ tests, they do not act as a reliable indicator of wider concepts of human intelligence, including imagination and social intelligence.

Creativity means thinking to come up with original ideas in a new way. It expands our knowledge and experience from known to new. Their ability to organize perceptions and emotions is one of fluency, flexibility, originality, divergent thinking. You must be able to see things in a different way or from another perspective in order for you to be creative. You need to be able to generate new possibilities or new alternatives, among other things. Creativity tests measure not only the number of alternatives that people can generate, but also the uniqueness of those alternatives. The ability to generate alternatives or to see things in a unique way does not arise from change; it is linked to other more fundamental qualities of thought, such as flexibility, tolerance of ambiguity or unpredictability, and enjoyment of things previously unknown. Quality training and extensive creative expressions inspire and encourage creative thinking to make a substantial contribution to society. Therefore, the educational process should aim to develop children's creative skills. "Creativity is the process of bringing something new into being. Creativity requires passion and commitment. It brings to our awareness what was previously hidden and points to new life. The experience is one of heightened consciousness: ecstasy." – Rollo May, *The Courage to Create* Some Characteristics of the creative personality are: 1. Creative people have a lot of energy, but they are also often calm and relaxed. 2. Creative people have a combination of playfulness and discipline or responsibility. 3. Creative people alternate between fantasy and imagination on one end and a core sense of reality on the other. 4. Creative people are at the same time remarkably humble and proud. 5. Creative people are generally considered rebellious and independent. A 2012 Adobe Creativity Study shows that 8 in 10 people feel that unlocking creativity is critical to economic growth, and almost two-thirds of respondents feel that creativity is valuable to society, yet a striking minority—only 1 in 4—believe that they live up to their own

creative potential. Creativity is seen in educational settings as a special approach to learning that involves both "creative" teaching and "creative" learning strategies. These strategies facilitate learning and are at the same time, the result of appropriate teaching and learning. The relationship between intelligence and creativity has been subject to empirical research for decades. Nevertheless, there is yet no consensus on how these constructs are related. One of the most prominent notions concerning the interplay between intelligence and creativity is the threshold hypothesis, which assumes that above-average intelligence represents a necessary condition for high-level creativity.

In this paper researcher found that there exists no significant difference in the mean score in the I.Q. and Creativity of total students (rural + urban) students of secondary school students (total sample) of North 24parganas district of West Bengal.

II. OBJECTIVES:

- i) To study the significance of the mean differences in the I.Q. and Creativity of total students (both rural and urban) of secondary school students (total sample) of North 24parganas district of West Bengal.
- ii) To study the significance of the mean differences in the I.Q. of rural (male and female) students and urban (male and female) students of secondary school students of North 24parganas district of West Bengal.
- iii) To study the significance of the mean differences in the Creativity of rural (male and female) students and urban (male and female) students of secondary school students of North 24parganas district of West Bengal.
- iv) To study the significance of the mean differences in the I.Q. and Creativity of rural (male and female) students of secondary school students of North 24parganas district of West Bengal.
- v) To study the significance of the mean differences in the I.Q. and Creativity of urban (male and female) students of secondary school students of North 24parganas district of West Bengal.

III. HYPOTHESIS:

H₀1: There exists no significant difference in the mean differences in the I.Q. and Creativity of total students (rural + urban) students of secondary school students (total sample) of North 24parganas district of West Bengal.

H₀2: There exists no significant difference in the mean scores of I.Q. between rural students and urban students of secondary school students of North 24parganas district of West Bengal.

H₀3: There exists no significant difference in the mean scores of Creativity between rural students and urban students of secondary school students of North 24parganas district of West Bengal.

H₀4: There exists no significant difference in the mean scores of I.Q. and Creativity between rural students of secondary school students of North 24parganas district of West Bengal.

H₀5: There exists no significant difference in the mean scores of I.Q. and Creativity between urban students of secondary school students of North 24parganas district of West Bengal.

IV. METHODOLOGY:

4.1 Population: Secondary school students of West Bengal Board of Secondary Education who are studying in class X were considered as population for this study.

4.2 Sample: Total number of students in the study was one hundred. Fifty (50) boys and fifty (50) girls students selected randomly from two rural and two urban secondary schools of North 24parganas district of West Bengal were chosen as sample.

4.3 Method: Experimental method is used of this study.

4.4 Variables: Mixed Type Group Test of Intelligence (MGTI-M) and Creativity test.

Tools: Intelligence test: This test has been constructed on the lines of Wechsler-Bellevue Scale of Intelligence developed by Dr. P.N.Mehrotra. Mixed Type Group Test of

Intelligence (MGTI-M) is used. It includes verbal and non-verbal test. Verbal test includes five sub tests (analogy, number series, classification, vocabulary, and reasoning) and non-verbal test also includes five sub-tests (analogy, arrangement, classification, digit symbols and part fitting). Ten minutes are allotted for solving each test and the whole test within 20 minutes time, total number are 100 (50 for verbal and 50 for non-verbal).

Creativity test: Verbal and non-verbal creativity test developed by Dr. B. K. Passi is used. This includes six sub-tests, i.e. (i) the seeing problems test, (ii) the unusual tests, (iii) the consequences test, (iv) the test of inquisitiveness, (v) the square puzzle test, and (vi) the blocks test of creativity. The first three tests are verbal and last three tests are non-verbal in nature. (Non-verbal performance materials are 19 Block of 1", 12 Block of ½", 1 Wooden Board, 5 Identical Right Angled triangles for Plastic and 5 Identical Quadrilaterals for Plastic). It measures three components of creativity—fluency, flexibility, and originality.

4.6 Techniques:

Statistical Analysis (Mean, SD, Std. Error, 't' value and graphical re-presentations are used.

4.7 Result and Interpretation of data: As for the mean, the standard deviation, Std. Error and t-test method, the data collected was evaluated in the above-mentioned inventories.

Table – 1
I.Q. Score of All Students

CN = Stands for Code Number of students,
 TM= Stands for total marks

I.Q. Score				Creativity				
Rural male + female			Urban male + female	Rural male + female			Urban male + female	
CN	TM		CN	TM	CN	TM	CN	TM
01	63		26	63	01	61	26	62
02	65		27	66	02	63	27	65
03	66		28	64	03	65	28	68
04	64		29	69	04	62	29	73
05	61		30	75	05	59	30	75
06	63		31	73	06	64	31	70
07	62		32	71	07	60	32	69
08	61		33	68	08	61	33	67
09	62		34	69	09	60	34	72
10	66		35	73	10	68	35	69
11	67		36	66	11	67	36	67

12	69	37	69	12	70	37	72
13	62	38	67	13	63	38	65
14	63	39	63	14	61	39	61
15	61	40	72	15	64	40	68
16	64	41	70	16	60	41	66
17	71	42	67	17	65	42	66
18	59	43	62	18	58	43	63
19	66	44	63	19	62	44	65
20	61	45	62	20	61	45	59
21	62	46	61	21	60	46	59
22	66	47	66	22	63	47	62
23	67	48	69	23	66	48	65
24	69	49	65	24	70	49	68
25	65	50	63	25	68	50	64

Table – 2

Showing the result of mean score, standard deviation, t-value and level of significance between I.Q. and Creativity of secondary school students in North 24Parganas districts of West Bengal (total sample)

Groups	N	Mean	SD	Std. Error	‘t’ value	Level of Significance
I.Q. (total students of rural + urban)	50	65.62	3.73	0.78	1.02	Not Significant
Creativity (total students of rural + urban)	50	64.82	4.09			

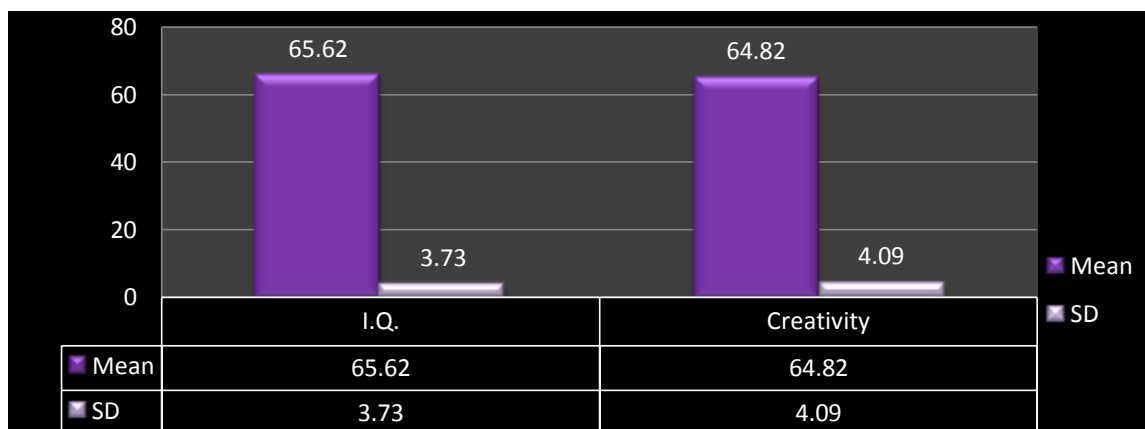
ddf = 98 Table value = 1.66 at 0.05 level 2.37 at 0.01 level

Interpretation –

Table - 2 shows that the mean scores on I.Q. and Creativity of total students (rural + urban) were 65.62 and 64.82 with standard deviation of 3.73 and 4.09 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value 1.02 was lower than the table value at 0.05 levels and

0.01 levels of significance. Thus, the difference between the two means is statistically not significant.

Therefore, the hypothesis that there exists no significant difference in the mean scores of I.Q. and Creativity of total students (rural + urban) of secondary school students (total sample) of North 24parganas district of West Bengal is accepted.



“Fig.” – 1

Mean differences in the I.Q. of male and female (both rural and urban) students of secondary school students (total sample) of North 24parganas district of West Bengal.

Table – 3

Showing the result of Mean score, Standard deviation, t-value and level of significance of the I.Q. between rural students (male + female) and urban students (male + female) of secondary school students in North 24Parganas districts of West Bengal

Groups	N	Mean	SD	Std. Error	't' value	Level of Significance
Rural	25	64.20	2.99	0.98	2.89	Significant
Urban	25	67.04	3.92			

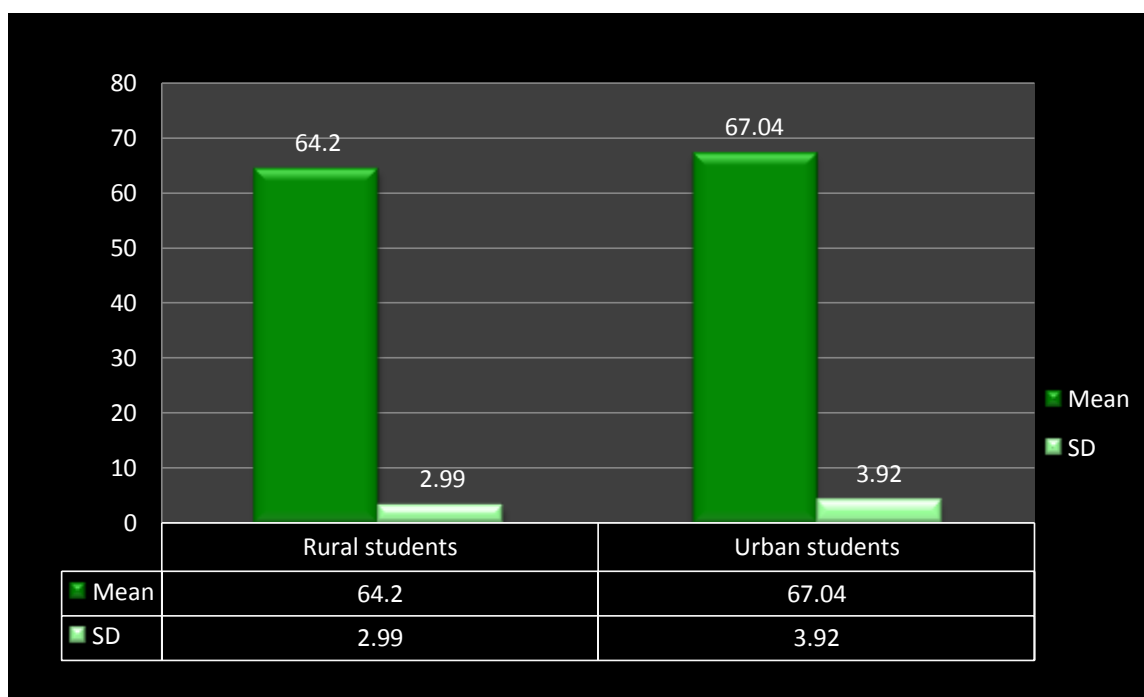
df = 48 Table value = 1.68 at 0.05 level 2.41 at 0.01 level

Interpretation –

Table - 3 shows that the mean scores on I.Q. of rural students and urban students were 64.20 and 67.04 with standard deviation of 2.99 and 3.92 respectively. The 't' value is 2.89 which is greater than the table value at 0.05 levels and 0.01 levels of

significance. Thus, the difference between the two means is statistically significant.

Therefore, the hypothesis that there exists no significant difference in the mean scores of I.Q. between rural students and urban students of North 24parganas district of West Bengal is not accepted.



“Fig.” – 2

Mean score, Standard deviation, t-value and level of significance of the I.Q. between rural students and urban students of secondary school students in North 24Parganas districts of West Bengal

Table – 4

Showing the result of Mean score, Standard deviation, t-value and level of significance of the Creativity between rural students (male + female) and urban students (male + female) of secondary school students in North 24Parganas districts of West Bengal

Groups	N	Mean	SD	Std. Error	't' value	Level of Significance
Rural	25	63.24	3.39	1.07	2.95	Significant
Urban	25	66.4	4.17			

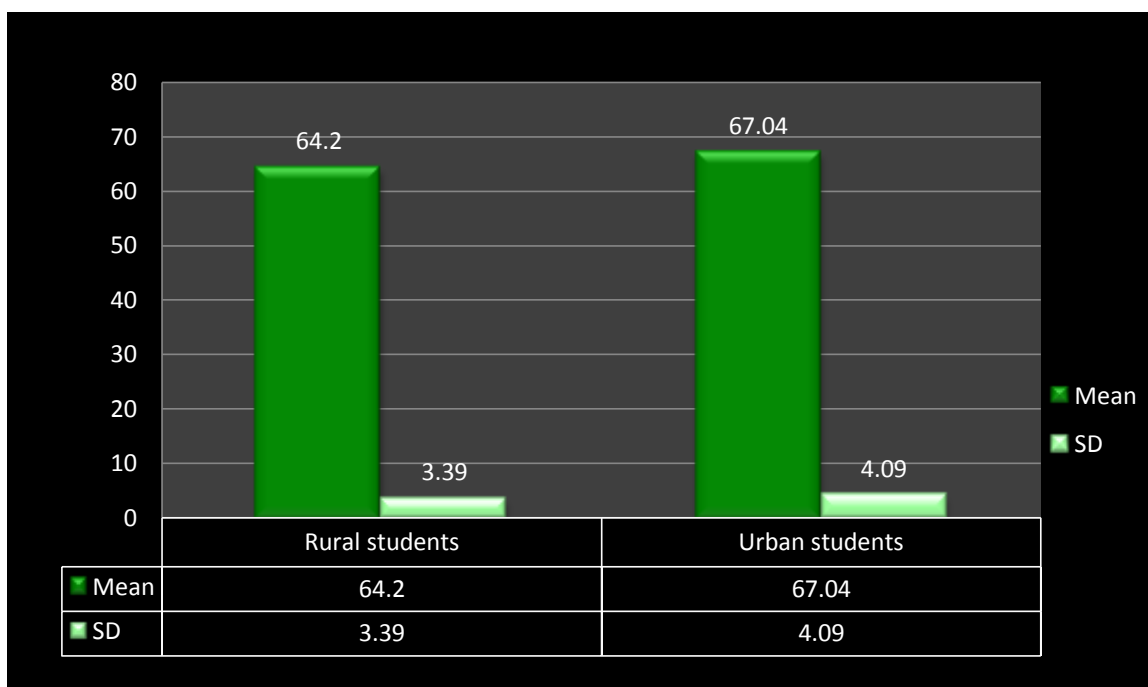
df = 48, Table value = 1.68 at 0.05 level, 2.41 at 0.01 level

Interpretation –

Table - 4 shows that the mean scores on Creativity of rural students and urban students were 63.24 and 66.40 with standard deviation of 3.39 and 4.17 respectively. The 't' value is 2.95 which is greater than the table value at 0.05 levels and 0.01

levels of significance. Thus, the difference between the two means is statistically significant.

Therefore, the hypothesis that there exists no significant difference in the mean scores of Creativity between rural students and urban students of North 24parganas district of West Bengal is not accepted.



“Fig.” – 3

Mean score, Standard deviation, t-value and level of significance of the Creativity between rural students and urban students of secondary school students in North 24Parganas districts of West Bengal

Table – 5

Showing the result of Mean score, Standard deviation, t-value and level of significance of the I.Q. and Creativity between rural students (male + female) of secondary school students in North 24Parganas districts of West Bengal

Groups	N	Mean	SD	Std. Error	't' value	Level of Significance
I.Q. (Rural students)	25	64.20	2.99	0.96	1	Not Significant
Creativity (Rural students)	25	63.24	3.39			

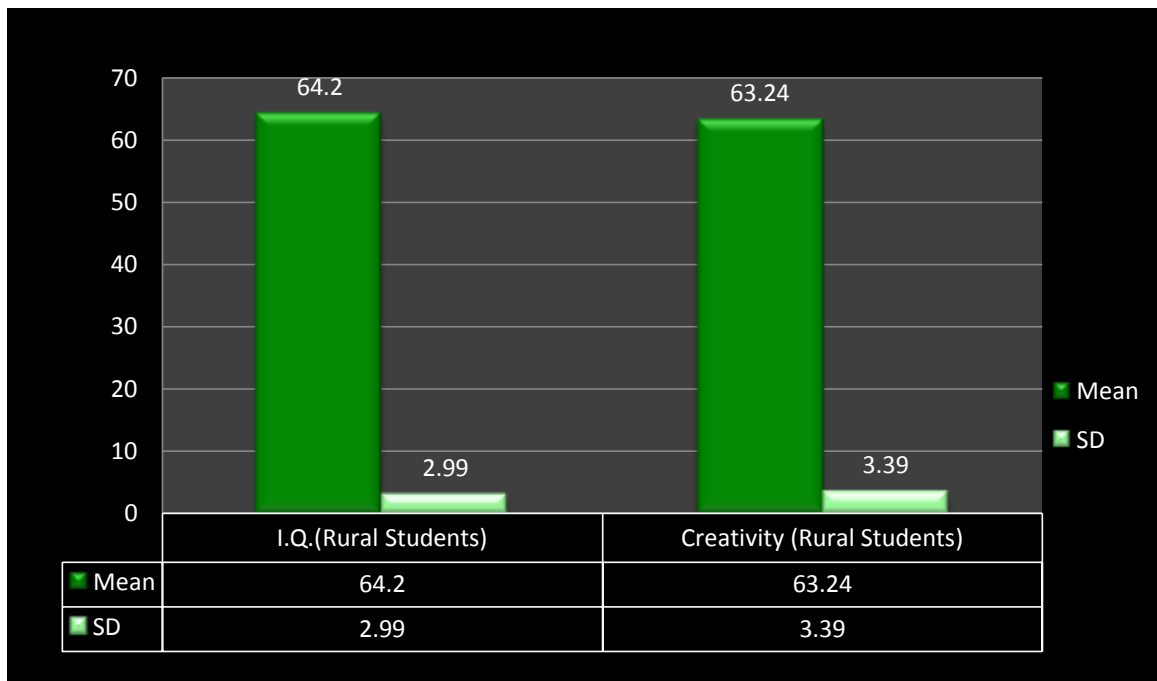
df = 48, Table value = 1.68 at 0.05 level, 2.41 at 0.01 level

Interpretation –

Table - 5 shows that the mean scores on I.Q. of rural students were 64.20 and creativity were 63.24 with standard deviation of 2.99 and 3.39 respectively. The 't' value is 0.96 which is lower than the table value at 0.05 levels and 0.01 levels of significance.

Thus, the difference between the two means is statistically not significant.

Therefore, the hypothesis that there exists no significant difference in the mean scores of I.Q. and creativity between rural students of North 24parganas district of West Bengal is accepted.



“Fig.” – 4

Mean score, Standard deviation, t-value and level of significance of the I.Q. and Creativity between rural students (male + female) of secondary school students in North 24Parganas districts of West Bengal

Table – 6

Showing the result of Mean score, Standard deviation, t-value and level of significance of the I.Q. and Creativity between urban students (male + female) of secondary school students in North 24Parganas districts of West Bengal

Groups	N	Mean	SD	Std. Error	't' value	Level of Significance
Urban I.Q.	25	67.04	3.92	1.14	0.88	Not Significant
Urban Creativity	25	66.4	4.17			

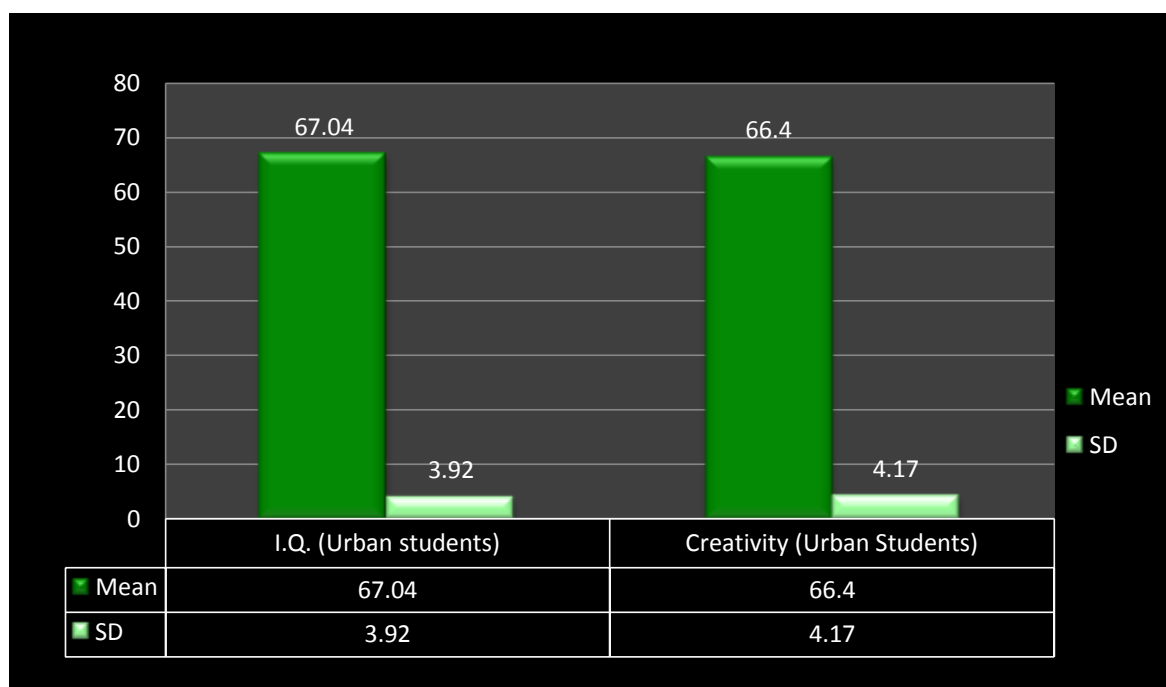
df = 48, Table value = 1.68 at 0.05 level, 2.41 at 0.01 level

Interpretation –

Table - 6 shows that the mean scores on I.Q. of rural students were 67.04 and creativity were 66.40 with standard deviation of 3.92 and 4.17 respectively. The 't' value is 1.14 which is lower than the table value at 0.05 levels and 0.01 levels of significance.

Thus, the difference between the two means is statistically not significant.

Therefore, the hypothesis that there exists no significant difference in the mean scores of I.Q. and creativity between urban students of North 24parganas district of West Bengal is accepted.



“Fig.” – 5

Mean score, Standard deviation, t-value and level of significance of the I.Q. and Creativity between urban students (male + female) of secondary school students in North 24Parganas districts of West Bengal

V. FINDINGS AND CONCLUSION OF THE STUDY:

From the Interpretation of the data which are represented by different Tables and Figures, it is concluded that –

i) There exists no significant difference in the mean scores of I.Q. and Creativity of total students

(rural + urban) of secondary school of North 24parganas district of West Bengal.

ii) There exists significant difference in the mean scores of I.Q. between rural students and urban students of North 24parganas district of West Bengal.

iii) There exists significant difference in the mean scores of Creativity between rural students and

urban students of North 24parganas district of West Bengal.

- iv) There exists no significant difference in the mean scores of I.Q. and Creativity of rural students of secondary school of North 24parganas district of West Bengal.
- v) There exists no significant difference in the mean scores of I.Q. and Creativity of urban students of secondary school of North 24parganas district of West Bengal.

REFERENCES:

- [1]. Chaudhary, V. (2004). A Comparative study of urban and rural high school boys and girls in relation to creativity. Indian Psychological Abstracts & Reviews, 11(2),17-19
- [2]. Emanuel Jauk, Mathias Benedek, Beate Dunst, Aljoscha C. Neubauer (2013), The relationship between intelligence and creativity: New support for the threshold hypothesis by means of empirical breakpoint detection, 41(4): 212–221.
- [3]. Mangal. S.K. (2012), Statistics in Psychology and Education, 2nd Edition, PHI Learning Private Limited, New Delhi – 110001.
- [4]. Mehrotra, P. N.(2008), Mixed Type Group Test of Intelligence (Verbal & Non-verbal), Moradabad, India.
- [5]. <https://www.creativityatwork.com/2014/02/17/what-is-creativity/>
- [6]. <https://www.csun.edu/~vcpsy00h/creativity/define.htm>
- [7]. <https://en.wikipedia.org/wiki/Creativity>
- [8]. https://en.wikipedia.org/wiki/Intelligence_quote