The Impact of Gender, Social Class and Locality on Students IQ in Purulia District: An Empirical Study

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Keywords:

IQ, Gender, Caste, Locality.

Abstract:

Brain is the most mysterious part of the human body. It is the most essential parts in our mental system. Intelligence is also a part of our brain. With the help of intelligence human beings are made their highest position in the earth. But in the progress of psychology differences in intelligence have long been a topic of debate among researchers and scholars. In the centre of discuss many questions are arisen that who are more intelligent male or female? Who are more intelligent rural students or urban students? This study was attempted to highlight the impact of caste, gender and locality on students IQ in Purulia district West Bengal. The sample consists of 120 male and 100 female students from six secondary schools (3 Urban and 3 Rural) in Purulia district, West Bengal, India selected randomly. Here Cattell (1920) Culture Fair Test of Intelligence is used to measure intelligence. The study revealed that there is significant difference exist between Male and Female with regard to IQ. On the other side this study found that there is significant difference exist between Rural and Urban school students with regard to IQ. The study also revealed that there is significance difference exists among General, OBC, SC and ST school students with regard to IQ but General School students are more intelligent than their counterparts.

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Introduction:

Man is the best creation in the world. Some people are born with sharp intelligence and some are stupid. But at present Intelligence is important and controversial topic throughout psychological perspective (**Divanker & Anuradha, 2014**) [1]. Now the questions come - how to define intelligence? Whether it can be measured accurately or not? In current years, several researchers have shown more interest in the measurement of intelligence. In modern age, intelligence is measured by various types of scales such as Binet - Simon scale, Stanford Terman-Merril second revised intelligence scale etc. Intelligence is the human ability but it differs from person to person. Intelligence is the hypothetical power we can't seen it but we measure it by various scales. Intelligence is an individual common mental ability**.** This ability influences his working. He can solve the problem with the help of this ability; he can modify his behaviour according to the need of the environment and society. Intelligence in the general mental ability by which, we can easily solve various kinds of problems, understand and deal with people, objects, and symbols, think rationally, and deal effectively with the environment. Intelligence is mostly related with convergent thinking. In the convergent thinking a person thinks about one solution of the problem and reacts. This means that a person, who is intelligent, solves his problem with the help of convergent thinking. There is no particular definition of intelligence in fact there are many definitions of intelligence defined by psychologists such as Binet directed, "ability of an individual to direct his behaviour towards a goal." Piaget directed intelligence as, "adaptation to physical and social environment." Backingham said, "Intelligence is the learning ability." Spearman said, " Intelligence may be thought of in terms of two abilities i.e. 'g' (general) and 's'(special)'' Thurstone defines intelligence in terms of five primary abilities. Henry Garrett said, "The abilities demanded in the solutions of problems which require to comprehension and use of symbols, i.e., words, numbers, diagrams, equations, formulate."Hunt said, "The technique that a child acquires for processing information supplied by his senses." P.E. Vernon said, "Intelligence is what intelligence tests measures." D.W. Wechsler said, "Intelligence is the aggregate or the global capacity of the individual to act purposefully, to think rationally and to deal effectively with the environment (**Aggarwal, 2010**) [2]. On above discussion this is clearly to know the meaning of intelligence.

Measure Intelligence:

Intelligence can be measured in a number of different ways, the most common one being the famous "intelligence quotient" or IQ (**Hsin-Yi Cohen, 2018**) [3].

Intelligence Quotient (IQ):

Measure of intelligence that takes into account a child's mental and chronological age.

$$\text{IQ Score} = \text{MA} / \text{CA} * 100$$

Mental age (MA):

The typical intelligence level found for people at a given chronological age.

Chronological age (CA):

The actual age of the child taking the intelligence test.

Today in our society, many rumour have been arisen which are non scientific, non practical concept, such as boys are more intelligent than girls or rural boys and girls are less intelligent than urban boys and girls (**Karmakar et al., 2016**) [4]. The ongoing debate about sex differences is based almost exclusively on results from modern Western societies. It does not take account of the possibility that there could be systematic differences between countries with different school systems, cultural traditions, and gender roles. Thus there is an urgent need to expand the evidence base on which theories about sex differences are built by including results from a greater variety of countries (**Lynn & Meisenberg, 2016**) [5].

Statement of the Problem:

The problem for the present study is specifically stated as below:

"The Impact of Caste, Gender and Locality on Students IQ in Purulia District: an Empirical Study".

Review of Related Literature:

Karmakar et al., (2016) [6] indicated that there is significance difference exists between male and female students with regard to IQ and significance difference exist between rural and urban sector with respect to IQ. **Ijaz et al., (2013**) [7] study to explore the cultural differences in intelligence. Result indicated that urban male students score high on non-verbal intelligence as compare to rural male students, similarly urban female students comparatively score higher than rural female students. **Liu and Lynn (2011**) [8] indicated that Chinese males have high IQ as compared to females and samples from United States and Japan has different IQ. **Wendy and Johnson (2007)** [9] investigates 436 (188 males, 248 females) participants (ages were between 18-79 from Australia, Great Britain and North America). Their result have shown that there was a very small gender difference in

general mental ability but males clearly performed better on Visio-spatial tasks while females performed better on tests of verbal usage and perceptual speed. **Halpern (2007)** [10] stated that there is no difference in intelligence between males and females over- all, the sexes are equally smart. **Speke (2007)** [11] men and women have equal cognitive capacity. **Nybourg (2005)** [12] states that in half of various studies, there have been no difference found, whereas in the other half, males have a slightly higher IQ, averaging at 3.8. **Haier (2007)** [13] found that general intelligence does not differ between men and women. **Halpern (2000)** [14] stated that sex differences have not been found in general intelligence.

Delimitations of the Study:

(A) Geographical Area

The investigation was delimited to only Purulia district of West Bengal India.

(B) Level of Education

The study was restricted to the secondary school students (Class- X) in Purulia district of West Bengal.

Objectives of the Study:

The study was conducted with the following objectives:

1. To find out the difference between 10th standard Male and Female school students with regard to IQ.
2. To find out the difference between 10th standard Rural and Urban school students with regard to the IQ.
3. To find out the difference on the basis of Social Class (General, OBC, SC and ST) of 10th standard school students with regard to IQ.

Hypotheses of the Study:

A hypothesis is an assumption to be tested. The null hypotheses for the present study are as follows:

Ho$_1$: There is no significant difference exists between 10th standard Male and Female school students with regard to IQ.

Ho$_2$: There is no significant difference exists between 10th standard Rural and Urban school students with regard to the IQ.

Ho$_3$: There is no significant difference on the basis of Social Class (General, OBC, SC and ST) of the 10th standard school students with regard to IQ.

Population of the Study:

All the secondary schools students (Class- X) in Purulia district of West Bengal (India) are comprised the population of this study.

Sample and Sampling:

Six Secondary school (3 Rural and 3 Urban) of Purulia districts, West Bengal were selected randomly. The samples are consisted with 120 male and 100 female of 10th standard students. Here stratified random sampling technique was adopted. The sample profile is given in Table-1.

Table 1: Sample profile

	Urban	Rural	**Total**
Male	80	40	**120**
Female	60	40	**100**
Total	**140**	**80**	**220**

Tools of the Study:

To measure the IQ Cattell Culture fair test of intelligence scale were used as a tool of the study.

Statistical Techniques Used:

In the present study, the statistical techniques used were as under:-

  i. Mean
 ii. Standard deviation
iii. Significance of difference between means (t-test)
 iv. ANOVA

Analysis of the Data:

Descriptive Statistics

Descriptive statistics help us to simply large amounts of data in a sensible way. Each descriptive statistic reduces lots of data into a simpler summary. Here we present our descriptive data (Table 2) in the form of Mean, standard deviation (SD) and correlation along with 't' critical ratio.

Table-2: Showing mean and SD along with t- critical ratio

Pair of comparison	N	Mean	S.D	SE_D	df	t-value	Remark
Male	120	87.44	15.52	1.42			*
Female	100	81.27	15.99	1.60	218	2.90	
Rural	80	90.36	13.40	1.50			
Urban	140	81.36	16.48	1.39	218	4.16	*

Significant at 0.05 level   *** Not Significant at 0.05 level*

Table 3: Showing Summary of ANOVA result

Variables	Source of Variation	df	Sum of Square	Mean Square	F-value	Remark
Social Class	Between Groups	3	9714.906	3238.302		
	Within Groups	216	46352.003	214.593	15.090	*
	Total	219	56066.909			

Significant at 0.05 level,   ***Not significant at 0.05 level*

Table-4: Sowing the mean of IQ among General, OBC, SC and ST school students

Social Class	General	OBC	SC	ST
Mean	93.03	81.60	85.93	73.98

Results and Discussion:

Testing of Ho_1:

The mean IQ scores for Male is 87.44 (S.D= 15.52) and for Female is 81.27 (S.D = 15.99) respectively. From Table-2, it is observed that the calculated 't' value (2.90) is greater than the table value (2.58 at 0.01 level & 1.96 at 0.05 level). So, it can be concluded that there is significant difference exist between Male and Female with regard to IQ. In view of the above Ho_1 is rejected. The result corroborates with the findings **Karmakar et al., (2016)** [5] and **Halpern (2007)** [9]. From the table-2 it is also found that the Male school students are comparatively more intelligent than Female school students.

Testing of Ho_2:

The mean IQ scores for Rural school students is 90.36 (S.D= 13.40) and for Urban school students is 81.36 (S.D = 16.48) respectively. From Table-2, it is observed that the calculated 't' value (4.16) is greater than the table value (2.58 at 0.01 level & 1.96 at 0.05

level). So, it can be concluded that there is significant difference exist between Rural and Urban school students with regard to IQ. In view of the above Ho_1 is rejected. The result corroborates with the findings **Karmakar et al. (2016)** [5]. From the table-2 it is also found that the Rural school students are comparatively more intelligent than Urban school students.

Testing of Ho₃:

From Table-3**,** it is observed that the computed 'F'-value among General, OBC, SC and ST students is found (15.090) is higher than table value (0.05 level=2.65, 0.01 Level= 3.88). Therefore it is significant at 0.01 and 0.05 level of significance. Hence the null hypothesis Ho5 is rejected. It means that there is significance difference exists among General, OBC, SC and ST school students with regard to IQ. From the table- 4 it is observed that General school students are more intelligent than their counterparts.

Conclusion of the study:

The major findings of this study revealed that there is significant difference exist between male and female school students with regard to IQ but male school students are comparatively more intelligent than female school students. So extra and diversified curriculum must be provided for female school students to develop their IQ level. On the other side this study found that there is significant difference exist between rural and urban school students with regard to IQ but rural school students are comparatively more intelligent than urban school students. The study also revealed that there is significance difference exists among General, OBC, SC and ST school student with regard to IQ but General School students are more intelligent than their counterparts.

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