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## A comparative study on intelligence difference between school boy's and girl's

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**Abstract**

**Background:** Human Intelligence refers to a set of cognitive abilities, such as thinking, remembering, reading, learning, problem solving and using language. But human Intelligence depends not only one reason, but also many factors like Genetics, Environment, Delivery mode, parental education and also gender can effect human Intelligence. The purpose of the present study is to find out the difference in IQ level between school level boys and girls.

**Materials & Method:** The researcher selected total 182 (91 boy's & 91 girl's) school students of class X-level as the subject from 4 different school of Jalpaiguri district, West Bengal, India. To find out the difference on IQ between Boy's & Girl's 'G.C. Ahuja Intelligence questionnaire'. Were used. This questionnaire composed of total 135 question and eight different types of test (classification, analogies, reasoning, vocabulary, comprehension, series and best answer). The collected data were calculated by using descriptive statistics and "t" test and the level of significance was set on 0.05 level.

**Result:** There were a significance difference exist on IQ level between school Boy's and Girl's as because cal "t" value (5.91) are higher than tab "t" 0.05(180) value(1.960). The Mean and Standard deviation of school aged Boy's and Girl's IQ level has been found  $95.94 \pm 23.31$  and  $77.64 \pm 18.21$ .

**Conclusion:** The finding demonstrated that school boy possess higher IQ level then school girls.

**Keywords:** Intelligence, Boy's, Girl's.

### 1. Introduction

Human intelligence refers to a set of cognitive abilities, such as thinking, remembering, reading, learning, problem solving and using language. The high genetic heterogeneity of intelligence poses an enormous challenge for understanding molecular mechanisms for cognition. Intelligence quotient (IQ) is the most widely used phenotype for characterizing human intelligence in psychometric studies. It is not surprising that IQ score is consistently associated with a number of mental disorders such as schizophrenia, autism, depression and anxiety. Although genetic epidemiology of the relationship between IQ score and the risk of related mental disorders becomes increasingly clear with various lines of studies, there are no substantial achievements to contribute to understanding the molecular mechanisms underlying human intelligence and relevant mental disorders<sup>[7]</sup>.

IQ scores have been shown to be associated with such factors as morbidity and mortality, parental social status, and, to a substantial degree, parental IQ. While the heritability of IQ has been investigated for nearly a century, controversy remains regarding the significance of Heritability estimates, and the mechanisms of inheritance are still a matter of some debate. IQ scores are used in many contexts: as predictors of educational achievement or special needs, by social scientists who study the distribution of IQ scores in populations and the relationships between IQ score and other variables, and as predictors of job performance and income.

Environmental factors play a role in determining IQ. Proper childhood nutrition appears critical for cognitive development; malnutrition can lower IQ. For example, iodine deficiency causes a fall, in average, of 12 IQ points. It is expected that average IQ in third world countries will increase dramatically if the deficiencies of iodine and other micronutrients are eradicated. Musical training in childhood may also increase IQ. Recent studies have shown that training in using one's working memory may increase IQ<sup>[8]</sup>.

Children Intelligence depends many factors, like genetics, parental education, occupation of the parents, environment etc. But how can effect the gender children and their Intelligenc.

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**Methodology**

In order to find out the difference in IQ level between school level Boy's and Girl's, the researcher selected total 182 (91 boy's & 91 girl's) school students of class X-level as the subject from 4 different school of Jalpaiguri district, West Bengal, India. To find out the difference on IQ between Boy's & Girl's 'G.C. Ahuja Intelligence questionnaire' were used. This questionnaire composed of total 135 question and eight different types of test (classification, analogies, reasoning, vocabulary, comprehension, series and best answer). For each sub-test, one page is devoted to instructions and practice examples. It serves the purpose of building morale with the subjects. It enables them to develop confidence and hence, they get adjusted with the nature of work.

**Table 1:** Number of Items and Time-Limits for each Sub-Test

Sub-Test	Number of Items	Time- Limit
1. Following Direction	9	4 minutes
2. Classification	20	4 minutes
3. Analogies	20	4 minutes
4. Arithmetic Reasoning	6	4 minutes
5. Vocabulary	40	4 minutes
6. Comprehension	8	4 minutes
7. Series	12	4 minutes
8. Best Answers	20	4 minutes
Total	135	32 minutes

**Scoring**

Scoring of response sheets was done by the investigator himself according to the scoring keys given in the manuals of four tests. A brief description of the scoring procedure for each test is given below:

The scoring of response sheet for Ahuja's group test of intelligence was done with the help of scoring stencil keys. The relevant stencil key was put on each page of the answer sheet. It was so adjusted that the page number was visible through the holes of the scoring stencil. Then the correctly marked answers visible through the holes were counted and written on the left margin of the answer sheet. The same procedure was followed for all the sub-tests except for the test-VII. In that case, the correct answers were affirmative that correspond with the numbers given on the stencil key. The question numbers that were answered wrong or were left un-attempted were marked with a red colored pencil. Both wrong as well as the un-attempted questions were deducted from the total number of items contained in the sub-test VII and the balance score was obtained. Then, the scores from the different pages of were written in the table given at the top of the front page of the answer sheet. The sum total of all the eight sub-tests were considered as the total score obtained by a subject, which was considered as his general mental ability score [1].

To find out the difference in mental ability level between school boy's and girl's, the collecting data were calculated by using descriptive statistics and "t" test and level of significance was set on 0.05 level [1].

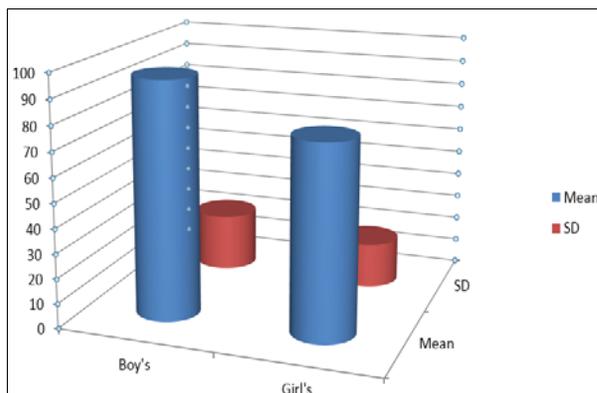
**Analysis of Data**

To find out the difference in mental ability level between APL and BPL category belonging school children, descriptive statistics and "t" test were applied at 0.05 level of significance and it is presented in the table.

**Table 2:** Significance differences of mean, standard deviation and t-ratio on IQ between school level boys and girls.

Category	Mean	Standard Deviation	t-ratio
Boy's	95.94	23.31	5.91*
Girl's	77.64	18.21	

Table value-t0.05 (180) = 1.960\* = Significance



**Fig 1:** Graphical representation of Mean and Std-Deviation on IQ between school level Boy's and Girl's.

**Findings**

It is evident from Table-2 and Figure -1 that the mean and standard deviation and t-ratio of Boy's has been found  $95.94 \pm 23.31$  and Girl's has been found  $77.64 \pm 18.21$ . Table -2 clearly revealed that, there were significant difference exist on IQ between Boys and Girls as because cal "t" value (5.91) are higher than Tab-"t" 0.05(180) value (1.960). From the above findings the researcher want to attribute that the existence of significance difference may be due to the reason that men have natural advantage, like men today still have physically bigger brain than women, even after adjustment for their different body size [11]. Might this underpin the five point difference in IQ between the sexes and also the researcher want to attribute that the high level of sex male hormone testosterone may be another reason for the differences.

**Results and Discursion**

Within the limitation of the present study the following Conclusions were drawn on the basis of obtaining results. There was a significant difference exist on IQ between Boy's and Girl's school level student.

The scholar is greatly satisfied to mention that the findings have accomplished the purpose for which the study was initially conceptualized. A study published on September, 2006 issue of the journal Intelligence analyzed 145 items from the scholastic Assessment test in 100000, 17 to 18 years-olds and found a male IQ advantage of 3.63 points In a study to compare the IQ Between Boy's and Girl's from Vanconver Hill Elementary school 2015. In this study found that mean difference between the IQ of a seven grade boys of the school is greater than the mean iq of seventh grade girls at the school. [13].

Irwing and Lynn (2005) Published a meta- analysis of 22 studies of sex differences on the progressive Matrices in university students and concluded that in these sample males have an advantage of 4.6 IQ points. In a more recent study, Mackintosh and Bennett (2005) reported data for a sample of 17 years olds on the progressive Matrices in which males obtained a higher mean of 6.4 points.

Lynn's hypothesis has been confirmed in the Spanish standardization sample of the WAIS-III, in which men obtained a high IQ than wome of 3.6 IQ points (Colom, Garcia, Juan- Espinoza & Abad, 2002). A further confirmation for a Spanish sample has been reporte by Colom and Lynn (2004), who found a male advantage among 18 years olds of 4.3 IQ points of the differential Aptitude test. Further supportive evidence for Lynn's hypothesis has been published by Meisenbeng (2009), who reports a male advantage of 2.81 IQ points among female [12].

The present study shows the similar result which the other researcher had discussed.

### Conclusions

Within the limitation of the present study the following conclusions were drawn on the basis of obtain difference exist on IQ level of school boy's and Girl's and in comparison of mean and standard deviation of IQ level. The finding demonstrated that school level Boy's possess higher IQ level than school level Girl's.

### Recommendation

On the basis of the findings of the present study, the following recommendations are made: a) similar study may be conducted on larger subjects with same or other variables. B) Similar study may be conducted on the basis of socio-economic condition, rural and urban areas student. c) The present study will helpful for farther research in the field of Physical Education and sports psychology.

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