



**Full Length Review Article**

**A COMPARATIVE STUDY ON INTELLIGENCE OF SECONDARY SCHOOL STUDENTS IN LAKHIMPUR DISTRICT OF ASSAM**

**\*<sup>1</sup>Jadab Dutta, <sup>2</sup>Dr. Pranab Chetiya, and <sup>3</sup>Soni, J.C.**

<sup>1,3</sup>Department of Education, Rajiv Gandhi University, Rono Hills, Itanagar-791112, Arunachal Pradesh, India

<sup>2</sup>Department of Education, Dikhowmukh College, P.O-Bharalua Tinawali Dist- Sivasagar Pin-785664, Assam India

**ARTICLE INFO**

**Article History:**

Received 12<sup>th</sup> June, 2015  
Received in revised form  
30<sup>th</sup> July, 2015  
Accepted 12<sup>th</sup> August, 2015  
Published online 30<sup>th</sup> September, 2015

**Key words:**

Intelligence,  
Mental Ability and Secondary School  
Students.

**ABSTRACT**

Intelligence is the general capacity of an individual or a mental energy of an individual, which enables him to adjust effectively in the environment and deal with novel situations of life. It is an organization comprising of the abilities of readiness, correctness and of understanding complicated and abstract things. It is an inborn natural power that makes a man capable of overcoming difficulties and problems of life. The present study investigated the intelligence of secondary school students in Lakhimpur district of Assam. This study is conducted on a sample of 500 Students comprised of 250 boys and 250 girls selected randomly from 16 Government and Private secondary schools of Sonitpur district of Assam. The descriptive survey method is used for data collection using group test of mental ability was constructed and standardized by Dr. S. Jalota. The findings of the study reported that there was not any significant difference in intelligence of government and private school students; no significant difference in the intelligence of school boys and girls; and there is no significant difference between in the intelligence of rural and urban secondary school students of Lakhimpur District of Assam.

Copyright © 2015 Jadab Dutta et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**INTRODUCTION**

Intelligence is an important determinate of one's performance in any field of activity, it tries to make an estimate of one's future success or failure. It is the future reference to predict the degree of attainment or success of an individual in an area or activity. Behaviour is generally influenced by the intellectual potential of a person. Intelligence refers to a student's ability and capacity and maintaining a definite direction in thinking to attain goal. Wundt in Germany, Galten in England and Cattell in America discovered that individuals differ in the accuracy and speed of their responses when they are tested in single functions. Intellectual development responds to the influence of this nature. All through dull children can't be made bright children, who tend to remain bright, yet there are evidences that a child may be born with high degree of potential ability to act intelligently, but unless he is stimulated through learning (improved environment) to exercise that capacity he may appear to be relatively dull or retarded.

Intelligence is the necessary condition for achievement. It is impossible to achieve without corresponding intelligence which is comprised of mental abilities. Ability is about the quality of being able to do something which serves as the foundation of achievement. Stern (1914) defined intelligence as a general capacity of an individual consciously to adjust his thinking to new requirements. It is the general mental adaptability to new problems and conditions of life. Keeping all these discussion, we may attempt a viable definition of intelligence as a sort of mental energy, in the form of mental or cognitive abilities, available with an individual which enables him to handle his environment in terms of adaptation to face novel situations as effectively as possible. In terms of this definition, we can assess a person's intelligence in proportion to his ability to use his mental energy to handle his problems and lead a happy and well-contented life.

**Review of Related Study**

Makhija (1973) conducted a study on interaction among values, interests and intelligence and its impact on scholastic achievements. The major findings of study were:

**\*Corresponding author: Jadab Dutta**

Department of Education, Rajiv Gandhi University, Rono Hills, Itanagar-791112, Arunachal Pradesh, India

- Intelligence had a significantly positive influence on scholastic achievement.
- Students, who were not oriented to political value, exploited their mental ability to much less extent than those who were highly oriented to it.
- Students who valued beauty, form, symmetry and grade in their life developed vocational interests in literary pursuit and avoided, as far as possible, sports and outdoor activities.
- Students who were oriented to practical and utilitarian view of life tended to exert their intellectual capacities more in the mechanical fields of vocations.
- 5. Students who valued power, competition, and renown, etc. in their life utilized their mental abilities to excel in crafts and scientific studies.
- 6. Intelligent students interested in science and medicine found religious value helpful in their performance but obstructive if they were interested in recreational activities.

Dhami (1974) conducted a study on intelligence, emotional maturity and socio-economic status as factors indicative of success in scholastic achievement and found:

- Intelligence and emotional maturity contributed to success in scholastic achievement. The contribution of intelligence was more than that of socio economic status.
  - A close and significantly high relationship existed between intelligence and emotional maturity.
  - The relationship between scholastic achievement and socio-economic status, though statistically significant, was not very high.
  - The relationship between scholastic achievement and intelligence, between scholastic achievement and emotional maturity and between socio-economic status and scholastic achievement differed significantly from each other.
  - The socio-economic status had positive effect on emotional maturity specially the factors of parent's education, family income, cultural level of the family, the type of house the family lived in and the vocational aspirations of learners.
  - The effect of socio-economic status on the scholastic achievement of girls was more striking.
  - The relationship between scholastic achievement and intelligence was higher in case of students of private schools than for those of government schools.
  - There was higher relationship between scholastic achievement and emotional stability in the case of class IX boys than in the case of class X boys who were more anxiety ridden due to the coming public examinations.
- Kaur (1992) studied the interrelationship between creativity, intelligence and academic achievement of 11<sup>th</sup> grade boys and found that relationship between creativity and intelligence was low but positive; academic achievement commonly influenced the correlation between creativity and intelligence; relationship between creativity and intelligence was non-linear; low positive relationship existed between creativity and academic achievement; creativity commonly influenced the correlation between academic achievement and intelligence; the relationship between intelligence and academic achievement was linear.

Balasubramanian (1993) studied how far intelligence was related to pupil's academic achievement in English and found:

- Intelligence of pupils positively influenced their academic achievement in English.
- Pupils having higher level intelligence preferred English medium classes and urban schools.
- Sex of the pupils had no influence on their intelligence as well as academic achievement in English.
- Pupils preferred schools of different types of management irrespective of their level of intelligence.
- The medium of instruction and locality in schools had no influence on pupil's academic achievement in English.
- The sex of the pupils and the nature of management of the school had no significant influence on their academic achievement.

Allik and Realo (1997) studied intelligence, academic abilities and personality. From the study it was found that low intelligence persons used their intellectual abilities for seeking excitement and elaborating fantasies while high intelligence persons used their intellect for regulating and controlling their affective lives. Petrill and Wilkerson (2000) conducted a study on intelligence and achievement: a behavioral genetic perspective and examined the relationship between intelligence, standardized tests of intelligence, and academic achievement from a behavior genetic perspective. Results suggested that genetic, shared environmental, non-shared environmental influence had an impact on intelligence and academic achievement. Behavioral genetic studies also suggest that the importance of genes might vary as a function of age. Other studies suggested that genes rivied the correlation and that the no shared environmental driven the discrepancy between measures of intelligence and achievement. Implications for the identification of intellectually and academically relevant environmental influences were discussed.

Vyas (2002) studied learning style, mental ability, academic performance and other ecological correlates of under graduate adolescent girls with the objective to study the effect of ecological correlates on the academic performance of girls students by taking a sample of 545 adolescent girls and found that most of the girls showed academic attainment of average level; no significant difference in the achievement of girls belonging to arts and science group; there was significant difference in the learning style and mental abilities of girls residing in urban and rural area. Panda (2005) studied correlation between academic achievement and intelligence of class IX students with the objective to study the relationship between academic achievement and intelligence by taking a sample of 765 secondary school adolescents studying in government, aided and private schools and found that there was lower relationship between intelligence and academic achievement in different categories of school and also there was a significant difference in academic achievement of students studying in different categories of school.

Panigrahi (2005) studied academic achievement in relation to intelligence and socio-economic status of high school students with the objective to examine the influence of intelligence and

socio economic status on academic achievement of high school students by taking a sample of 100 students from Bhubaneswar city of Odisha and found that there was significant and positive correlation between academic achievement and intelligence; high intelligence leads to better academic success; low positive correlation between academic achievement and socio economic status; there was no significant difference between boys and girls with respect to academic achievement.

Motah, Mahendrenath (2008) conducted a study entitled "The Influence of Intelligence and Personality on the Use of Soft Skills in Research Projects among Final Year University Students. The study examined the moderating influence of the "Big Five" model of personality, emotional intelligence, and the impact of multiple intelligences, on the use of soft skills among final year students. The work investigated the variables which affect students in the elaboration of their research projects during their final year of study. 187 students reading for their final years were asked to fill out questionnaires comprising questions on the personality traits as proposed in the Big Five model and on Multiple Intelligences. This study provided information about how young students used soft skills in their work, and how multiple intelligences and their personality influenced the preparation and presentation of their final year project.

Habibollah *et al.* (2010) made a study on "Intelligence and academic achievement: an investigation of gender differences". The objective of this study was to examine if a relationship exists between intelligence and academic achievement and if the relationship differs between males and females. Two research questions are examined in this paper:

- what is the relationship between different aspects of intelligence and academic achievement?
- Is there any significant gender differences regarding the relationship between different aspects of creativity and academic achievement? Participants (N=153; male=105 and female=48) completed creativity test. Cumulative grade point average (CGPA) was used to select the participants. Intelligence was measured using the Catell Culture Fair Intelligence Test (CFIT-3a and b). Pearson Correlation analysis indicated that aspects of intelligence were not related to academic achievement for both males and females. The finding of this study was: There existed no significant relation between males and females regarding which aspect of intelligence related to academic achievement.

Saikia, Pallabi and Choudhary (2014) made a study on "Effect of Intelligence on Academic Achievement of Secondary School Students- A Study in Lakhimpur District of Assam". The objective of this study was to study the academic achievement of the secondary school students according to gender and place of residence; to determine the level of intelligence to gender and place of residence. This study is conducted on a sample of 100 class X students from government and provincialised schools of Lakhimpur district of Assam.

The normative survey method is used for data collection. The findings of the study was:

- There is difference between boys and girls student on the academic achievement in the test examination,
- There is difference between rural and urban students on the average academic achievement in the test examination and
- It is also found that the mean score of intelligence for both rural and urban students is quite high.

### Need of the study

The present study has been designed to study Intelligence of Secondary School Students in Lakhimpur District of Assam. Here, the *Intelligence* is a vital factor in academic achievement. It may be explained as the capacity for knowledge and understanding especially as applied to the handling of novel situation; the power of meeting novel situation successfully by adjusting behaviour to the total situation. It is an organization comprising of the abilities to readily, correctly, understand the complicated and abstract things. It is an inborn natural power that makes a man capable of overcoming difficulties and problems of life. Intelligence is a variable that contributes towards academic achievement, and the evidence of the same is presented by a large number of researches. In view of number of researches, the researchers of the present study have gone through the studies.

### Statement of the Problem

The problem of the present study has been stated as follows:

"A Comparative Study on Intelligence of Secondary School Students in Lakhimpur District of Assam"

### Objectives of the Study

The study is designed with the following objectives:

1. To study the intelligence of government and private secondary school students of Lakhimpur district of Assam.
2. To find out the difference between rural and urban secondary school students in relation to intelligence of Lakhimpur district of Assam.
3. To compare the gender differences between of: a. rural b. urban c. governmentd. private in relation to intelligence of secondary school students of Lakhimpur district of Assam.

### Hypotheses of the Study

The hypotheses are stated as under:

- There is no significant mean difference in intelligence of government and private secondary school students of Lakhimpur district of Assam.
- There is no significant mean difference between rural and urban secondary school students in relation to intelligence of Lakhimpur district of Assam.
- There is no significant mean difference between male and female of government secondary school students in relation to intelligence.

- There is no significant mean difference between male and female of rural secondary school students in relation to intelligence.
- There is no significant mean difference between male and female of urban secondary school students in relation to intelligence.
- There is no significant mean difference between male and female of private secondary school students in relation to intelligence.
- There is no significant mean difference between rural male and female of private secondary school students in relation to intelligence.
- There is no significant mean difference between urban male and female of private secondary school students in relation to intelligence.

## MATERIALS AND METHODS

The Descriptive approach is used in the study. The present study is a comparative study on intelligence of Secondary School Students in Lakhimpur District of Assam. Keeping in view the nature of study, the survey method was found to be more suitable.

### Population of the Study

The population of the present study constitutes all the secondary school students studying in class X of Lakhimpur district of Assam.

### Sample of the Study

The sample is of small number of representative individuals from the population. This study is conducted on a sample of 500 Students, 250 boys and 250 girls selected randomly from 16 Government and Private secondary schools of Lakhimpur district of Assam. The final sample is selected randomly. Due representation is given to rural and urban localities as well as management of schools.

### Tools Used

The group test of mental ability was constructed and standardized by Dr. S. Jalotawas employed by the researchers for the purpose of data collection.

### Statistical Techniques Used

In this study various statistical measures such as Mean, SD and t-test are used.

## RESULTS AND DISCUSSION

Collected data through above mentioned inventories were analyzed in terms of mean, standard deviation and t-test method. The results have been presented in the tables.

**Hypothesis 1:** There is no significant mean difference in intelligence of government and private secondary school students of Lakhimpur district of Assam.

It is found that the mean scores of both government and private students are 56.81 and 72.95 respectively. When the t-

test was applied to test the significance of the mean difference between these groups, it reported a CR (t) value 17.35. This was found to be highly significant. Hence hypothesis 1 is rejected. This means that there is a great difference in intelligence of government and private secondary students of Lakhimpur district.

**Hypothesis 2:** There is no significant mean difference between rural and urban secondary school students in relation to intelligence of Lakhimpur district of Assam.

It is found that the mean scores of both rural and urban students are 58.54 and 63.34 respectively. When the t-test was applied to test the significance of the mean difference between these groups, it reported a CR (t) value 3.90. This was found to be significant. Hence hypothesis 2 is rejected. This means that there is a great difference in intelligence of both rural and urban secondary students of Lakhimpur district.

**Hypothesis 3:** There is no significant mean difference between male and female of government secondary school students in relation to intelligence.

It is found that the mean scores of government male and female students are 58.30 and 55.32 respectively. The computed CR (t) between their mean differences is 2.18. Which is found significant at 0.05 level. Hence hypothesis 3 is rejected. This means that there is a great difference in intelligence of government male and female secondary students of Lakhimpur district.

**Hypothesis 4:** There is no significant mean difference between male and female of rural secondary school students in relation to intelligence.

It is found that the mean scores of male and female of rural students are 60.56 and 56.52 respectively. When the t-test was applied to test the significance of the mean difference these groups, it reported a CR (t) value of 2.15. This was found to be significant. Hence hypothesis 4 is rejected. This means that there is a great difference in intelligence of male and female rural students of Lakhimpur district.

**Hypothesis 5:** There is no significant difference between male and female of urban secondary school students in relation to intelligence.

It is found that the mean scores of urban male and female students are 63.89 and 62.8 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value (=2.27) is greater than the table value 1.97 at 0.05% level of significance. This means that the mean difference is significant. Hence hypothesis 5 is rejected. This further means that urban male and female secondary school students have great difference of intelligence.

**Hypothesis 6:** There is no significant difference between male and female of private secondary school students in relation to intelligence.

It is found that the mean scores of male and female of private students are 73.63 and 72.27 respectively. When the t-test was

applied to compare the mean scores of both the groups, it was found that the calculated t-value ( $=1.08$ ) is less than the table value 1.97 at 0.05% level of significance. This means that the mean difference is not significant. Hence hypothesis 6 is accepted. This further means that male and female of private secondary school students have been found to possess similar level of intelligence.

It is found that the mean scores of male and female of rural students are 71.72 and 71.44 respectively. When the t-test was applied to test the significance of the mean difference these groups, it reported a CR (t) value of 0.13. This was found to be not significant. Hence hypothesis 7 is accepted. This means that there is at similar level in intelligence of male and female rural students of Lakhimpur district.

**Table 1. Mean Standard deviation and t-value of the government and private secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Government	372	56.81	13.35	17.35	Highly Significant
	Private	128	72.95	7.06		

**Table 2. Mean Standard deviation and t-value of the rural and urban secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Rural Students	250	58.54	15.01	3.90	Highly Significant
	Urban students	250	63.34	12.39		

**Table 3. Mean Standard deviation and t-value of male and female government secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Male	186	58.30	13.62	2.18	Significant
	Female	186	55.32	12.94		

**Table 4. Mean, Standard deviation and t-value of the male and female of ruralsecondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Male	125	60.56	15.23	2.15	Significant
	Female	125	56.52	14.57		

**Table 5. Mean, Standard deviation and t-value of the male and female of urban secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Male	125	63.89	12.68	2.27	Significant
	Female	125	62.8	12.14		

**Table 6. Mean, Standard deviation and t-value of the male and female of private secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Male	64	73.63	7.81	1.08	Not Significant
	Female	64	72.27	6.20		

**Table 7. Mean, Standard deviation and t-value of the rural male and female of private secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Male	32	71.72	10.15	0.13	Not Significant
	Female	32	71.44	6.99		

**Table 8. Mean, Standard deviation and t-value of the urban male and female of private secondary school students**

	Group	N	Mean	Standard deviation	t-value	Remarks
Intelligence	Male	32	75.53	3.65	2.14	Significant
	Female	32	73.09	5.28		

**Hypothesis 7:** There is no significant difference between rural male and female of private secondary school students in relation to intelligence.

**Hypothesis 8:** There is no significant mean difference between urban male and female of private secondary school students in relation to intelligence.

It is found that the mean scores of urban male and female of private students are 75.53 and 73.09 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value ( $=2.14$ ) is greater than the table value 2.00 at 0.05% level of significance. This means that the mean difference is significant. Hence hypothesis 8 is rejected. This further means that urban male and female of private secondary schools students have great difference of intelligence.

### Conclusion

The study found no difference on intelligence in respect of male and females of private and rural male/female private secondary school students. But it reported real difference in overall between government and urban private secondary school students.

### Suggestions for Further Research

- Studies can be carried out in relation to intelligence and emotional intelligence of students at whole level.
- Studies can be carried out in relation to academic achievement and emotional maturity of students at whole level.
- Studies can be carried out in relation to intelligence and academic achievement of students at whole level.
- Similar study on senior secondary students will be a significant area of research to depict their personality characteristics.
- The present study is conducted on class-X students. Similar studies may be undertaken on this variable at the other levels of education as well.
- In the present study cross sections that have been investigated are male/female, rural/urban and government/private. Many others cross sectional comparison of various other categories of students like home/residence, tribal and non-tribal studying in government/private schools may be carried out.
- Studies can be carried out in relation to adjustment and motivation of students at whole level.

### REFERENCES

Allik, Juri and Realo, Anu 1997. "Intelligence, Academic Abilities and Personality". *Personality and Individual Differences*, 23(5), PP.809-814. In: *Psychological Abstracts*, 85(3), 1998, P. 1082, Sr. No. 7618.

Balasubramanian, N. 1993. A study of pupils academic achievement in English in relation to their intelligence. *The journal of English Language Teaching*, Vol. XXVIII, No.5,

pp.128-137. In: *Indian Educational Abstracts*, Issue4, January 1998, pp. 89-90.

- Dhami, G.S. 1974. Intelligence, Emotional Maturity and socio-economic status as Factors Indicative of Success in Scholastic Achievement. Ph.D. Edu., Punjab University. In: M.B. Buch, ed. (1983). *Third Survey of Educational Research (1978-1983)*. New Delhi: National Council for Educational Research and Training, Sri, Aurobindo Marg, P. 663.
- Habibollah. Naderi, Rohani. Abdullah, H. Tengku Aizan and Jamaluddin. Sharir 2010. "Intelligence and academic achievement: an investigation of gender differences". *Life Science Journal*, Vol 7, No 1, <http://www.sciencepub.net>, pp.83-87.
- Jalota, S. 1976. *Manual for General Mental Ability Test*. Ivory Printers, Chandigarh.
- Mahendrenath Motah 2008. The Influence of Intelligence and Personality on the Use of Soft Skills in Research Projects among Final Year University Students: A Case Study, *Proceedings of the Informing Science and IT Education Conference (In SITE)*.
- Makhija, G.K. 1973. Interaction among values, Interests and Intelligence and its impact on Scholastic Achievements. Ph.D. Psy., Agra University. In: M.B. Buch, ed. 1983. *Third Survey of Educational Research (1978-1983)*. New Delhi: National Council for Educational Research and Training Sri Aurobindo Marg, P.673.
- Panda, M. 2005 Correlation between Academic Achievement and Intelligence of Class IX Students, *Edutracks*, Vol.5, No.1, Hyderabad, Sri Suresh Chandra Sharma, Neelkamal Publication Pvt.Ltd.
- Panigrahi, M.R. 2005. Academic Achievement in relation to Intelligence and Socio-Economic Status of High School Students, *Edutracks*, volume5, No2, Hyderabad, SriSuresh Chandra Sharma, Neelkamal Publication Pvtltd.
- Petrill, Stephen A. and Wilkerson, Bessie. 2000. Intelligence and Achievement: A behavioural genetic perspective. *Educational Psychology Review*. 12(2), PP. 185-199, In: *Psychological Abstracts*, 87(8), 2000, PP.3182-3183, Sr.No. 24980.
- Saikia. Pallabi and Choudhary 2014. "Effect of Intelligence on Academic Achievement of Secondary School Students- A Study in Lakhimpur District of Assam". *Golden Research Thoughts*, ISSN 2231-5063, Vol. 3, Issue-10, <http://www.aygrt.istj.net>, pp-01-07.
- Stern, W., *Psychological Methods of Testing Intelligence*, Baltimore: Warwick and York: INC, 1914, p. 3.

\*\*\*\*\*