

International Journal of Multidisciplinary Trends

E-ISSN: 2709-9369

P-ISSN: 2709-9350

www.multisubjectjournal.com

IJMT 2021; 3(1): 163-166

Received: 13-12-2020

Accepted: 15-01-2021

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Intelligence and academic achievement as correlates

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DOI: <https://doi.org/10.22271/multi.2021.v3.i1c.52>

Abstract

Education has become indispensable for everyone and achievement is the end product of this endeavour. Academic Achievement occupies a very important place in education as well as in the learning process. Intelligence is a concept which has affected the life of every individual in all spheres of life. It is responsible for the academic outcome and finally the success in life. A child can make use of his intellectual capacities to the optimum if he gets a conducive environment. This research focuses on finding the relationship between Intelligence and Academic Achievement of school students. Moreover, this study is conducted to find out the difference in Intelligence as well as Academic Achievement with respect to gender of school students. The tool used is G.C Ahuja Group Test of Intelligence (Dr. G.C. Ahuja, Former Research Officer, Institute Of Indian Languages, Mysore). In the present study, keeping the limited source of time and money the sample of 100 students schools located in Patiala was randomly selected. The sample of 100 students comprised of 50 boys and 50 girls. As the investigators had to collect the data from the students and the lockdown was a major challenge, so the investigators prepared the soft copy of the tool in Google form. The tool was filled online. The school students were randomly selected from Patiala. The test was administered on 100 students comprising 50 boys and 50 girls. Their Academic Achievement scores of the previous class final exam were also collected online only. After the analysis and interpretation of data, a moderate relationship was found between Intelligence and Academic Achievement of school students. Moreover, no significant difference was found in Intelligence and Academic achievement between boys and girls.

Keywords: Academic achievement, Education, learning process

Introduction

True education releases capacities, develops analytical abilities, confidence, willpower and goal setting competencies and instills the vision that will enable one to become a self-motivated agent of social change, serving the best interest of community. Academic Achievement occupies a very important place in education as well as in the learning process. Intelligence is the ability to use memory, knowledge, experience, understanding, reasoning, imagination and judgment in order to solve problem and adapt to a new situation. Intelligence is a concept which has affected the life of every individual in all spheres of life. It is responsible for the academic outcome and finally the success in life. A child can make use of his intellectual capacities to the optimum if he gets a conducive environment. Academic Achievement represents performance outcome that indicates the extent to which a person has accomplished specific goals which were the focus of activities in instructional environments, specifically in schools, colleges and university. Education has become indispensable for everyone and achievement is the end product of this endeavor.

Objectives of the study

- 1) To find out the relationship between Intelligence and Academic Achievement of school students.
- 2) To find out the difference in Intelligence with respect to gender of school students.
- 3) To find out the difference in Academic Achievement between boys and girls school students.

Review of related literature

Manhas (2004) ^[5] carried out a study on a sample of 400 students of 11th class boys and girls and found a high positive correlation between Intelligence, creativity, Academic Achievement, mental health, self- concept and stress with emotional Intelligence. She further reported that girls' level of emotional Intelligence was slightly more than the boys. She also found significant difference between the emotional Intelligence of adolescents of government schools and private schools as well as urban and rural areas.

Gurubasappa, H. D. (2009) [4] studied the relationship among Intelligence, self-concept and Academic Achievement of secondary school students. The major findings were: There was a high significant correlation between Academic Achievement of students with Intelligence and self-concept. A significant difference was found in the Academic Achievement of students with difference in level of Intelligence and self-concept. A significant main and interactive effect of gender with Intelligence and self-concept on Academic Achievement was also found.

Naderi, *et al.* (2010) [6] carried out a study to infer whether Intelligence and gender are predictors of Academic Achievement. The results indicated that there was no significant difference between the Academic Achievement of male and female students.

Hypotheses of the study

(i) There is no significant relationship between

Intelligence and Academic Achievement of school students.

- (ii) There is no significant difference in Intelligence with respect to gender of school students.
- (iii) There is no significant difference in Academic Achievement between boys and girls school students.

Research tool used

G.C Ahuja Group Test of Intelligence (Dr. G.C. Ahuja, Former Research Officer, Institute of Indian Languages, Mysore)

Universe of the study and sample

In the present study, keeping the limited source of time and money the sample of 100 students schools located in Patiala was randomly selected. The sample of 100 students comprised 50 boys and 50 girls.

Table 1: Distribution of the Sample

Total	Gender	
	Boys	Girls
100	50	50

As the investigators had to collect the data from the students and the lockdown was a major challenge, so the investigators prepared the soft copy of the tool in Google form. The tool was filled online. The school students were randomly selected from Patiala. The test was administered on 100 students comprising 50 boys and 50 girls. Their Academic Achievement scores of the previous class final exam were also collected online only.

Statistical techniques used

Descriptive statistical techniques, Mean and Standard Deviation were used to see the normality of distribution and to calculate the average of scores on the tests. t-ratio was calculated. Correlation Coefficient 'r' was calculated.

Analysis and interpretation of data

The present study was conducted to find out the relationship of Intelligence and Academic Achievement of school

students. Correlation Coefficient was computed to find out the relationship between Intelligence and Academic Achievement. Moreover, this investigation was also conducted to find out the difference in Intelligence and Academic Achievement with respect to gender of school students. Mean and Standard Deviation were calculated and then t-test was applied to do the interpretation of data.

Correlation between intelligence and academic achievement among school students

To find out the correlation between Intelligence and Academic Achievement, data was collected from 100 students of classes VIII-XI from Patiala. To find out the relationship between Intelligence and Academic Achievement, Pearson Product Moment Correlation Coefficient was applied. The value of 'r' is as shown in Table-2.

Table 2: Correlation between Intelligence and Academic Achievement among School Students

Variables	N	Mean	SD	df	r	Level of Significance
Intelligence	100	97.94	16.61	98	0.519	*Significant at 0.01 level
Academic Achievement	100	77.37	12.53			

(Table value of 0.01=0.254*)

Table 2 reveals that the Mean scores of Intelligence and Academic Achievement among School Students were 97.94 and 77.37 respectively. Standard Deviation of Intelligence and Academic Achievement was calculated as 16.61 and 12.53 respectively. Correlation between Intelligence and Academic Achievement was calculated by using Pearson Product Moment Correlation Coefficient. The value of r was found to be =0.519 which is significant at 0.01 level of significance. (Table value of 'r' at 0.01 level = 0.254).It indicates that one variable is responsible to bring about a change in the other variable. Hence, there is a moderate

relationship between Intelligence and Academic Achievement among School Students.

Therefore, the null hypothesis, "There is no significant relationship between Intelligence and Academic Achievement of school students" is rejected.

Comparison of intelligence with respect to gender of school students

The sample of 50 boys and 50 girls was taken for the study. To find out the significant difference in Intelligence between boys and girls, t-test was applied. The values are as shown in Table 4.2.

Table 3: Comparison of Statistical Values of Intelligence between Boys and Girls School Students

Intelligence	Gender	N	Mean	SD	t-value	df	Level of Significance
	Boys	50	95.78	20.64			
Girls	50	100.1	11.05				

Table value of t at 0.05=1.98

Table 3 reveals that the Mean scores of Intelligence of boys and girls were 95.78 and 100.1 respectively whereas Standard Deviation for Intelligence of boys and girls were calculated as 20.64 and 11.05 respectively. The t- value was found to be 0.19 with df = 98, which is not significant at

0.05 level of significance. (Table value of 't' at 0.05 level =1.98). Hence, there is no significant difference between the statistical values of boys and girls with respect to their Intelligence.

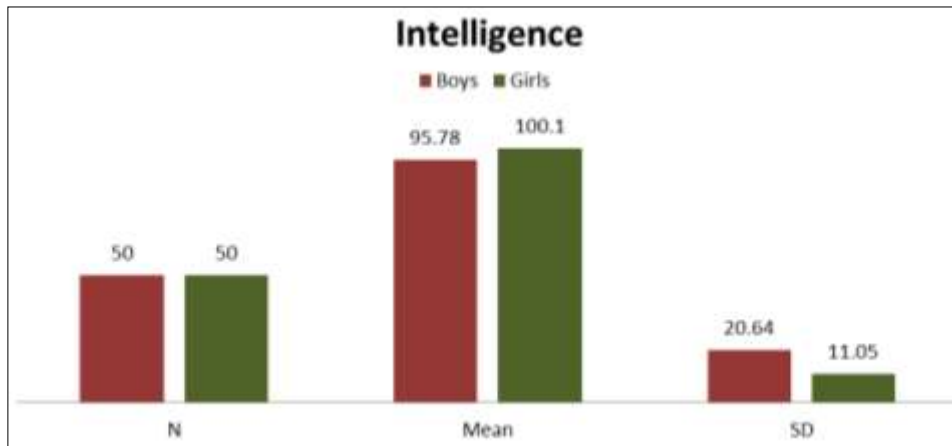


Fig 1: Comparison of Statistical values of Intelligence between Boys and Girls

Figure 1 shows the comparison between Mean and Standard Deviation of boys and girls with respect to Intelligence. The graph shows that the difference between boys and girls in Intelligence is not significant. Therefore, the null hypothesis, "There is no significant difference in Intelligence with respect to gender of school students" is accepted.

Comparison of academic achievement with respect to gender of school students

The sample of 50 boys and 50 girls was taken for the study. To find out the difference in Academic Achievement between boys and girls, t-test was applied. The values are as shown in Table 4.

Table 4: Comparison of Statistical Values of Academic Achievement between Boys and Girls

Academic Achievement	Gender	N	Mean	SD	t-value	df	Level of Significance
	Boys	50	78.62	12.88			
Girls	50	76.12	12.16				

Table value of t at 0.05=1.98

Table 4.4 reveals that the Mean Scores of Boys and Girls for Academic Achievement were 78.62 and 76.12 respectively whereas Standard Deviation for Academic Achievement of Boys and Girls were 12.88 and 12.16 respectively. The t-

value was found to be 0.32 with df = 98 which is not significant at 0.05 level. (Table value of 't' at 0.05=1.98). Hence there is no significant difference between Boys and Girls with respect to Academic Achievement.

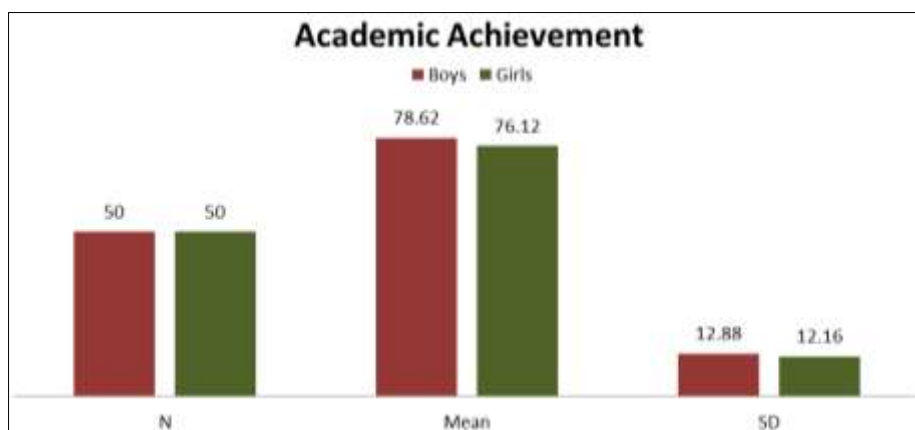


Fig 2: Comparison of Statistical values of Academic Achievement between Boys and Girls

Figure 2 shows the comparison between the Mean scores and Standard Deviation of Boys and Girls with respect to Academic Achievement. The graph depicts that there is no significant difference between Boys and Girls with respect to Academic Achievement.

Therefore, the null hypothesis “*There is no significant difference in Academic Achievement with respect to gender of school students*” is accepted.

Conclusion

In the present study, the investigators have tried to study the relationship of Intelligence and Academic Achievement of School students. After the analysis and interpretation of data, the following conclusions are drawn:

- There is a positive significant relationship between Intelligence and Academic Achievement of school students.
- There is no significant difference in Intelligence with respect to gender of school students.
- There is no significant difference in Academic Achievement with respect to gender of school students.

Educational implications

- The findings of the study may provide help to school teachers to know the relationship between Intelligence & Academic Achievement. Consequently, the teachers may take steps to make their teaching effective through various strategies & methods.
- Individual differences can best be dealt with in the light of findings of the study in handling the students.
- Even during the COVID-19 face, the investigators could collect the data through online mode by Google form. Hence digital mode can be utilized upto the extent whenever required for doing further research.

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