

## Intelligence and academic achievement: A comparative study of private residential school children and rural government school children

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### Abstract

The present study aimed to study and compare the intelligence of private residential school children and rural government school children. The study compares the intelligence, its gender differences and correlation with academic achievement of these two groups. Malin's Intelligence Scale for Indian children (MISIC) by Arthur J. Malin, 1962 to measure the IQ levels, Marks obtained in English, Mathematics and Science were considered to measure the Academic achievement. Sample comprised of 120 high achieving children from each group. The study concludes that there was vast variation in the IQ levels of private residential school children and rural government school children. 85 percent of private residential school children were average and above average range in IQ levels where as 85percent of rural government school children were below average in IQ levels.

There was significant gender difference in intelligence scores of private residential school children where as in rural government schools there was no significant gender difference.

In private residential schools I.Q., and Academic Achievement were highly correlated where as in rural government schools, there was no significant correlation between the measures of Academic Achievement and I.Q.

**Keywords:** academic achievement, intelligence, rural government school children, private residential school children

### 1. Introduction

Academic achievement is defined as attainment of educational goals. Every individual is influenced by so many factors for their Academic accomplishment. These factors are broadly categorized in to personality, family and school related factors. Among personality factors Intelligence is the major factor of concern for study. Intelligence has been defined as ability to perceive information and to retain it as knowledge to be applied towards adaptive behaviors with in an environment or context. Intelligence is determined by heredity and environment. It is important factor in determining potentials and abilities of an individual which makes us to focus to study the influence of intelligence on Academic Achievement.

Learning process of individual is taking place under different settings. There is vast variation in these settings with regard to human and non-human resources and their role in learning process. So it is necessary to study and compare these factors to strengthen the positive ones and reduce the negative factors for improving education system.

### 2. General Objective

To compare the Intelligence factor contributing to the Academic Achievement of private residential school children and rural government school children.

#### 2.1 Specific objectives

To study and compare the Intelligence factors of private residential school children and rural government school children.

To study and compare the gender differences, if any, in the contribution of Intelligence factors to the Academic Achievement of private residential school children and rural government school children.

To study and compare the contribution of Intelligence factors to the Academic Achievement of private residential school children and rural government school children.

### 3. Review of Literature

Extensive research has been done to study the effect of intelligence on Academic Achievement. These studies reported significant positive relationship between Intelligence and Academic Achievement (Masih, 1974; Nutan, 1979; Srivastava, 1987; Chakravarthi, 1988; Yadav & Srivastava, 1989; Chadha and Chandna 1990; Kaur, 1991; Pand & Nath, 1992; Sudha & Bindra, 1993, Aswal, 2001, Ahmad and Raheem, 2003; Begum and Phukan, 2005) [12-13-16-5-11-14-3-4].

The same result was obtained for rural and urban communities and also for both sexes (Kaur, 1991; Gupta, Mukherjee & Chatterjee, 1993, Panigrahi, 2005; Tulani, 2008, Dhall & Thukral, 2009, Gurubsappa, 2009; Charan, 2011) [11-9-15-17-8].

There was significant difference between intelligence of students at the secondary level in different type of schools i.e. Govt. and Govt. aided, Matriculation and Corporation, corporation and Govt. aided and Govt. and Matriculation schools. Also there was no significant difference between intelligence of students at the secondary level in govt. and matriculation and corporation and Govt. schools. There was

significant correlation among the variables, mental alertness, intelligence, achievement in mathematics and English of students at the secondary level in different types of schools. (Chamundeswari and Sumangala, 2006) [7]

In contrast to the above results studies of Ajawani and Rungta, 2004; [2] Panda, 2005 revealed that intelligence is not a variance in under and over achievement.

**4. Materials and Methods**

**4.1 Sampling procedure**

**Selection of schools**

Popular Private Residential Schools were selected from daily newspaper advertisements from different localities of Hyderabad City. Rural government schools which had got more than 60 percent results in last three consecutive years were selected from the office of commissionerate of examination. A total of 17 schools were listed and selected.

**5. Results and Discussion**

**Table 1:** Comparison of Frequency Distribution on Dimensions of Intelligence of Private Residential School Children and Rural Government School Children

Dimension		IQ RANGES				
		Below 70	71-80	81-90	91-100	101-110
1. Verbal I.Q.	Private Residential	-	17(14.7)	48(40.00)	39(32.50)	16(13.33)
	Rural Government	36(30)	66(55)	14(11.6)	4(3.4)	-
2. Performance I.Q.	Private Residential	-	17(14.7)	37(30.83)	46(38.33)	20(16.67)
	Rural Government	56(46.6)	62(51.7)	2(1.7)	-	-
3.Total	Private Residential	-	18(15)	45(37.50)	41(34.17)	16(13.33)
	Rural Government	42(35)	72(60)	6(5)	-	-

Percentages in Parenthesis

It is clear from the above table that in private residential schools only 15 percent of children were in below average in verbal, performance and Total I.Q, where as in rural government schools, most of the children fell in the below average group on the Intelligence measure i.e., 85 percent in verbal I.Q, 98 percent in performance I.Q and 95 percent in Total I.Q. were in below average group. Very few children were in average group i.e., about 11 percent in verbal I.Q., only 1.7 percent in performance I.Q. and 5 percent in total I.Q. Only 3 percent of the children scored above average score, that too only in verbal dimension of Intelligence. In private residential schools 46 percent in verbal I.Q, 66 percent

**Selection of children**

Children studying in selected private residential schools and rural government schools in IX and X classes with highest ranks (first 3-4 ranks) in the previous year were selected. Total sample comprised 120 children, 60 from IX class and 60 from X class.

**4.2 Tools and Techniques**

Tools used for data collection were Malin’s Intelligence Scale for Indian children (MISIC) by Arthur J.Malin,1962 to measure the IQ levels, Marks obtained in English, Mathematics and Science were considered to measure the Academic achievement.

**4.3 Statistical procedure used for the data analysis**

Percentages, Arithmetic Mean, Standard Deviation, Two Sample Z Test, correlation were used for the analysis of the data.

in performance I.Q, 57 percent in Total I.Q. were in above average group. Private residential school Children scored better on performance I.Q., Government school children scored better on verbal I.Q.

Above data shows large difference in IQ levels of private residential school children and rural government school children. 85 percent of private residential school children were average and above average range in IQ levels where as 85 percent of rural government school children were below average in IQ levels. It shows the influence of socio cultural factors on IQ levels of individuals.

**Table 2:** Comparison of Mean Scores on Dimensions of Intelligence between Boys and Girls of Private Residential School Children and Rural Government School Children

Dimension		Boys(N=36)		Girls(N=84)		Z-Value
		Mean	Standard Deviation	Mean	Standard Deviation	
1. Verbal I.Q.	Private Residential	87.88	9.0453	91.17	6.8077	2.2936*
	Rural Government	69.2777	8.7427	72.3095	6.583	1.8676
2. Performance I.Q.	Private Residential	89.08	8.9123	92.22	7.7249	1.9904*
	Rural Government	67.7222	7.2962	66.6666	6.2466	0.7572
3.Total I.Q.	Private Residential	88.31	8.7787	96.75	6.9092	2.3407*
	Rural Government	68.5	7.0488	69.4881	4.9454	0.7643

\*P<0.05 \*\*p<0.01

It is evident from the above Table that in private residential schools there is significant gender difference in intelligence scores. Girls scored better than boys on all the I.Q.

dimensions. In rural Government schools there was no significant gender differences in three dimensions of I.Q. i.e. Verbal, Performance and Total I.Q.

**Table 3:** Correlation between the Dimensions of Intelligence and Academic Achievement of Private Residential School Children and Rural Government School Children

Dimension		English	Mathematics	Science
Verbal I.Q.	Private Residential	0.2915**	0.3394**	0.2915**
	Rural Government	0.1558	0.0142	0.1646
Performance I.Q.	Private Residential	0.3438**	0.3534**	0.3138**
	Rural Government	0.0058	0.1284	0.0246
Total I.Q.	Private Residential	0.3330**	0.3691**	0.3230**
	Rural Government	0.0986	-0.0654	0.1218

\*P<0.05 \*\*p<0.01

In private residential schools I.Q., and Academic Achievement were highly correlated i.e. 0.01 level with regard to English, Mathematics and Science. Coming to the rural government schools, there was no significant correlation between the measures of Academic Achievement and three dimensions of I.Q. except with regard to Mathematics and Total I.Q, all other variables were positively correlated but not statistically significant. Intelligence is a contributing factor for Academic Achievement for private residential schools, where as in rural government schools learning is not determined by intelligence. Rural government school children, due to deprived environmental conditions, may be lacking behind in I.Q. levels, but they are excelling in academics due to the factors other than intelligence.

**6. Conclusion**

From the above discussion it can be concluded that there was large difference in the IQ levels of private residential school children and rural government school children. 85 percent of private residential school children were average and above average range in IQ levels where as 85 percent of rural government school children were below average in IQ levels. There was significant gender difference in intelligence scores of private residential school children where as in rural government schools there was no significant gender difference. In private residential schools I.Q., and Academic Achievement were highly correlated where as in rural government schools, there was no significant correlation between the measures of Academic Achievement and I.Q.

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