



## Relationship Between Intelligence and Academic Achievement of Secondary Level Students

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### ABSTRACT

The present paper attempts to analyze the relationship between intelligence and academic achievement of secondary school level students. The Sample of the study consisted class tenth of 150 secondary level students (75 boys and 75 girls) from AMU Aligarh schools. Group Test of Mental Ability by R.K.Tondon was used to find out intelligence of students and for measuring academic achievement the annual examination marks of the students were used. From The results of the study had been found that intelligence positively and significantly related with academic achievement of secondary level students.

**KEYWORDS :** academic achievement, intelligence, secondary level students.

### Introduction

Academic achievement of students especially at the secondary school level is not only a pointer to the effectiveness or otherwise of schools but a major determinant of the future of youths in particular and the nation in general (Abosedo&Ewumi, 2008). Academic achievement is the indicator of the students' level of acquired knowledge or skill, which has been gained as a result of training or experience. High academic performance is not possible in the absence of intelligence but the presence of high intelligence is no guarantee of high academic performance. Academic achievement is the indicator of the candidates' level of acquired knowledge or skill, which has been gained as a result of training or experience. High academic performance is not possible in the absence of intelligence but the presence of high intelligence is no guarantee of high academic performance. (Patel, 2011)

According to the Caplin's Dictionary of Psychology (1965), "academic achievement has been defined as the level of attainment of proficiency in academic work as evaluated by teacher or through standardized achievement tests".

Eysenck et al. (1972) defined "achievement as a general term for the successful attainment of some goal requiring certain effect or degree success attained in the task. Academic achievement in this sense will mean in learning the contents of books taught in the school".

From the above definitions of the terms academic achievement as given by different authors is the knowledge attained or skill developed in school subjects usually determined by test scores or by marks assigned by teacher. It appears that there is a general consensus that the achievement of students in the courses, syllabus, subjects and work studied by them as expressed in the form of grades, percentages or any other point scale can be broadly termed as the academic achievement or educational achievement.

### Intelligence

Intelligence as a concept has been understood in different ways by different psychologists and has, therefore, a variety of definition According to Stern (1914), "intelligence is 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". Terman (1921), "an individual is intelligent in the proportion that he is able to carry on abstract thinking". Stoddard (1943) "intelligence means the ability to undertake activities that are difficult, complex and abstract; which are adaptive to a go, are done quickly and have social value which leads to the creation of something new and different".

Kakkar (1977) conducted his study on 122 eight class male students and found significant differences in intelligence between the means of high. Medium and low curiosity students. Statistically significant relationship between intelligence and curiosity was obtained. Thorndike's intelligence test (non-verbal form-A) was used as a measure of intelligence.

### HYPOTHESES:

1. There exists no significant relationship between intelligence and academic achievement of secondary level students on total sample.

2. There exists no significant relationship between intelligence and academic achievement of secondary level students on boys & girls sample.  
3. There exists no difference between boys and girls on academic achievements and intelligence of secondary level students.

### METHOD

#### SAMPLE

The sample of the study was taken through simple random sampling technique. The sample consisted of 150 students from different schools of AMU in Aligarh. Out of these 75 students selected were girls and 75 students selected were boys. All the students are age ranged between 14 to 17 years.

### TOOLS

#### ACADEMIC ACHIEVEMENT

The annual examination marks of class ninth students obtained from the office of the institution to measure academic achievement.

#### INTELLIGENCE:

Group Test of Mental Ability developed by R.K.Tondon (1971). It has a total of 91 questions employing seven types of sub-tests namely; number series, vocabulary similar, vocabulary opposites, classifications, best answers, analogies and reasoning. All the questions have been framed in selective type providing 4 to 5 alternative to each. The questions are simple Hindi to enable the children of Hindi speaking areas to answer. The age group 10 to 18 years.

### PROCEDURE

A good rapport was established with the subjects and it was assured to them that their responses will be kept confidential and will be used only for research purpose. Then the tools were administered on to them and the investigator explained the items to the participants. SPSS 16.0 package for undertaken simple correlation and t-test analysis was used.

### RESULTS AND INTERPRETATION OF DATA

**Hypothesis 1: There exists no significant relationship between intelligence and academic achievement of secondary level students on total sample.**

**Table: 1 Correlation on total sample Shows relationship between intelligence and academic achievement of secondary school students (Pearson's coefficient correlation 2-tailed test) on total sample.**

Variable1	Variable2	N		significant
Intelligence	Academic achievement	150	0.457**	.000

**\*\* Correlation is significant at the 0.01 level (2-tailed).**

Table 1 indicates relationship between intelligence and academic achievement and the value of coefficient of correlation ( $r$ ) was found to be 0.457 which is significant at 0.01 level of significance. Hence the hypothesis that "There exists no significant relationship between intelligence and academic achievement of secondary level students" is rejected. This means that intelligence and academic achievement are

positively and significantly associated. The academic achievement of the students is effected with their intelligence. It is clear from the findings that there is a significant relationship between academic achievement and intelligence of secondary school students. Studies conducted by Panigrahi (2005) and Chamundeswari and Vaidharani (2006) also support the results that academic achievement and intelligence are significantly correlated.

**Hypothesis 2: There exists no significant relationship between intelligence and academic achievement of secondary level students on male and female sample.**

**Table: 2 Correlations on male sample Shows relationship between intelligence and academic achievement of secondary school students (Pearson's coefficient correlation 2-tailed test) on male and female sample.**

Variable1	Variable2	Gender	N		significant
Intelligence	Academic achievement	Boys	75	0.416**	.000
		Girls	75	0.452**	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table: 2 indicates that the relationship between intelligence and academic achievement of male & female students and the value of coefficient of correlation (r) was found to be 0.416 which is significant at 0.01 level of significance. Hence the hypothesis "There exists no significant relationship between intelligence and academic achievement of secondary level students on male & female sample" is rejected. This means that intelligence and academic achievements of secondary level students of male & female are positively and significantly associated. The academic achievement of the students is effected with their intelligence.

**Hypothesis 3: There exists no difference between boys and girls on academic achievements of secondary level students.**

**Table 3: Shows difference between boys and girls on academic achievements and intelligence of secondary school students.**

Variables	Gender	N	Mean	Std. Deviation	t-value
Intelligence	Boys	75	71.04	9.724	2.955
	Girls		66.64	8.469	
Academic Achievement	Boys	75	62.54	1.451	2.723
	Girls		57.61	9.399	

Table 3 indicates the difference between boys and girls of secondary level on academic achievement, the mean value of boys is more than girls 62.54 & 57.61 (SD=1.451 & 9.399) respectively and t' value was found to be 2.723. which is non-significant at 0.01 level. The intelligence of boys higher than girls, the mean value of boys and girls 71.04 & 66.64 (SD=9.724 & 8.469) respectively and t' value was found to be 2.955. which is non-significant at 0.01 level Hence the hypothesis that "There is no difference between boys and girls on academic achievements and intelligence of secondary level students." is rejected. This means that there is difference in boys and girls of secondary level on academic achievement and intelligence.

**CONCLUSIONS** After statistical analysis of the data, the researchers arrived at the following conclusions: It was found that:

1. There is significant and positive correlation found between intelligence and academic achievement of secondary level students. It was found that students from low intelligence have lower academic achievement as compared to the academic achievement of students from higher intelligence level.
2. There is significant and positive relationship found between intelligence and academic achievement of secondary level students on male and female sample. It was found that both (boys and girls) students from low intelligence level have lower academic achievement as compared to the academic achievement of both (boys and girls) students from higher intelligence level.
3. There is difference found between boys and girls on academic achievements and intelligence of secondary level students. This means that there is difference in boys and girls of secondary level on academic achievement and intelligence.

The findings of investigation may provide help to the school personnel, teachers, counselors and guidance workers to develop suitable methods of teaching and instruction among the secondary level students a contributing factor for developing intelligence which is essential for high academic achievement. That there is difference in boys and girls of secondary level on academic achievement and intelligence.

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