

## **A Comparative Study Of The Interests Of High Achievers And Low Achievers In Science Stream.**

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### **Introduction**

Aim of the study was to investigate the interest patterns of high achieving and low achieving students reading in Science stream. It may be noted that there is no direct and definite answer in literature as to what is the nature of the relationship between interest and academic achievement. Numerous studies have shown that interest alone has a low relationship to achievement in schools and colleges (7). On the other hand some studies indicate that there is a high and very significant positive relationship between interest in Science and probability of success in Science stream (3). It has been reported that several scales of the Strong Vocational Interest Blank and those of the Kuder Preference Record are significantly related to mental ability and academic achievement though these interest scores alone are insufficient to predict academic achievement accurately (1). In a study by Chatterji and Mukerjee (2) it was observed that the multiple correlation between ten interest scores and performance in college was + .46.

*Instrument used* : Chatterji's Non-language Preference Record (CNPR) (1) was used as instrument to measure the interests of the subjects. This non-language inventory measures interests in ten broad fields viz., Fine Arts, Literary, Scientific, Medical, Agricultural, Technical, Crafts, Outdoor, Sports and Household works.

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**Subject :** Two different groups were used as subjects. 118 students obtaining 70% or more marks in the Higher Secondary examination of the Board of Secondary Education, W.B., and another group of 125 students securing 50% or less marks in the same examination were considered. The former group of students was identified as High Achiever group whereas the later group was called Low Achiever group. Scores on ten different fields of interests were available for each of the 243 subjects.

**Procedure**

The means of the score distributions for the ten fields of interests for the two groups viz. , High Achievers and Low Achievers were computed and compared with the help of usual t-test. The results are presented in Table-1.

**Table 1**  
 SHOWING THE MEANS AND THE STANDARD DEVIATIONS  
 AND THE CORRESPONDING T-VALUES OF THE TWO  
 GROUPS OF STUDENTS IN THE TEN FIELDS OF  
 INTERESTS.

Variables Group	Fine.	Lit.	Sc.	Med.	Agr.	Tech.	Cr.	Out.	Sport.	House.
High $\bar{X}$	19.05	26.74	38.82	31-68	23.73	28.39	20.16	25.39	24.81	14.80
Achi- $\sigma$ ever	8.56	8.75	16.40	17.99	5.49	10.65	7.76	14.79	13.51	6.53
Low $\bar{X}$	19.51	28.05	41.17	38.10	23.55	29.24	21.70	20.25	23.11	16.19
Achi- $\sigma$ ever	9.61	8.48	16.16	16.44	6.31	10.22	7.11	13.33	12.00	6.15
t-values	0.40	1.18	0.62	2.90**	0.23	0.47	1.62	2.84**	1.04	1.48

\*\* indicates significant at 1% level.

It is evident from t-values that the two groups did not differ significantly from each other with respect to interests in different fields except that in Medical and Outdoor activities. It may be noted that the

High Achiever group scored higher than the Low Achiever group in scales like Outdoor and Sports whereas the Low Achiever one scored higher in Literary, Scientific, Medical, Technical, Craft and Household scales. However, all these differences were not significant except those in case of Medical and Outdoor as mentioned earlier. It is interesting to note that the Low Achiever group possessed more interest on those scales which are supposed to be related to academic activities involved in the Science stream. On the contrary High Achiever group showed more interest in non-academic activities. This may appear to be rather unusual. But it should be pointed out here that achievement does not primarily depend on interest ; aptitude or ability is considered to be the main contributor of academic success. As the ability level of none of the two groups is known, it is not possible to say definitely whether the low achievement in the Science stream was due to lack of ability for those who were interested in activities related to Science or not. Moreover, it may also be true that the reaction of the Low Achievers to the interest inventory items reflected the compensatory behaviour to academic activity, as their achievement in these fields are rather low.

The method of analysis of variance was employed for further analysis of the data. The design used for this analysis is suggested by Lindquist (5) and is known as 'mixed design'. In such a design some of the treatment comparisons are intra-subject and some are inter-subject. Individual difference where all the treatments can be applied to all the individuals is the most desirable one. But this is not feasible in many practical situations and the present one is an example of the same.

Here, one student cannot be classified under High Achiever and Low achiever groups simultaneously. Hence, if achievement has any effect on student and if this effect varies from level to level it is not possible to control the individual difference in order to test the significance of achievement effect. This is an intersubject comparison. But as for each student the scores on different fields of interest are available, the individual difference can be controlled in comparing the interest effect and hence, it becomes an intra-subject comparison. The results obtained through analysis of variance are presented in Table-2.

**Table 2**  
SHOWING THE ANALYSIS OF VARIANCE

Source	d. f.	Sum of squares	Mean sum of squares	F-value
Between				
Subject	242	15424.80	63.74	
Achievement	1	303.43	303.43	4.84*
Error (Between)	241	15121.37	62.74	
Within				
Subject	2187	431786.70	197.43	
Interest	9	118045.44	13116.16	92.14**
Interest x Achievement	9	4992.46	554.72	3.90**
Error (Within)	2169	308748.80	142.35	
Total	2429	447211.50		

By analysing the results presented in Table-2 it can be said that the High achievers differed significantly from the Low Achievers so far as their interest scores were concerned. This result was, however, observed while analysing the means of the two groups on different Interest scales. The interests of the subjects in ten fields of the CNPR varied widely which was reflected in the high F-value corresponding to interest effect. The interaction between Interest and Achievement was significant which indicated that the patterns of interests of the two groups under consideration were not identical.

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