

## **A Study of Academic Achievement of +2 Students in Relation to their Intelligence, Emotional Maturity and Self-Concept**

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### **Abstract**

The present study was aimed to investigate the academic achievement of +2 students in relation to their intelligence, emotional maturity and self-concept. The investigator has used the Verbal test of General Mental Ability by M.C. Joshi (1956), Emotional Maturity scale by Yashvir Singh and Mahesh Bhargave (2006), Children's Self-Concept Scale by S.P. Ahluwalia (2001) and Academic achievement scores of student at +1 level (2008) to collect the data. The sample consists of 490 students from +2 grade student of Shimla District of Himachal Pradesh, were selected randomly. The data was analyzed by using Analysis of Variance and t-ratio.

**KEYWORDS:** Academic Achievement, Intelligence, Emotional Maturity and Self – Concept.

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### **INTRODUCTION**

Education is a transmission of knowledge and information through predefined teaching and training programme. However, quality of learning depends on the ability, capabilities and opportunity available to the individual. Quality of education is perceived in terms of satisfaction of teacher students and society. Education is also about developing behavior based on positive values, understanding and respect for other people, for their rights for the natural world, for the past and the future. Students need to know how to cope with change, with lots of information and with diversity and difference. Education must lead to outcomes where learners feel confident and mature enough in using knowledge and skill they have acquired.

Academic achievement is the center around which our educational system moves. Generally, the scholastic achievement refers to the degree of mastery in certain areas of study attained in a prescribed line and measured by the examination system.

Intelligence is a broader term used to describe a property of the mind that encompasses many related abilities, such as the capacities to reason, to plan, to solve problems, to think abstractly, to comprehend ideas, to use language, and to learn. There are several ways to define intelligence. In some cases, intelligence may include traits such as creativity, personality, character, knowledge, or wisdom. However, most psychologists prefer not to include these traits in the definition of intelligence.

One of the major aims of any good educational programme is to help the learners to gain emotional maturity. Emotional maturity implies controlling our emotions more willingly than letting our emotions to give us the orders. Like instincts, emotions too are very important forces in the education and development of the child.

Self-concept is mental and conceptual awareness and persistent regard that individual holds with regards of his own being. It is a dominant element in personality pattern. Therefore the measurement of self concept becomes essential there are several terms that are used synonymous with self concept most them are self image , ego, self understanding, self perception and phenomenal self. Self concept is key stone of individual personality. It is his way thinking, feeling, and behaving in good manner. It is the person's idea regarding the whole of himself. Hall and Lindzey (1957) pointed out two different meanings of self concept. The first denote the person's attitude feelings, perception and evaluation of himself, secondly the Psychological processes which govern behavior and adjustment of the person.

#### **OBJECTIVES:**

1. To study the effect of levels of intelligence on the academic achievement of +2students.
2. To study the effect of levels of emotional maturity on the academic achievement of +2students.
3. To study the effect of levels of Self-concept on the academic achievement of +2students.
4. To study the interactional effect of levels of intelligence and emotional maturity on the academic achievement of +2 students.
5. To study the interactional effect of levels of intelligence and self-concept on the academic achievement of +2 students.
6. To study the interactional effect of levels of emotional maturity and self-concept on the academic achievement of +2 students.
7. To study the triple interactional effect of levels of intelligence, emotional maturity and self-concept on academic achievement of + 2 students.

#### **HYPOTHESES:**

1. There will be significant difference in the academic achievement of +2 students in relation to their levels of intelligence.
2. There will be significant difference in the academic achievement of +2 students in relation to their emotional maturity.
3. There will be significant difference in the academic achievement of +2 students in relation to their self-concept.
4. There will be significant difference in the interactional effect of levels of intelligence and emotional maturity on the academic achievement of +2 students.
5. There will be significant difference in the interactional effect of levels of intelligence and self-concept on the academic achievement of +2 students.
6. There will be significant difference in the interactional effect of levels of emotional maturity and self-concept on the academic achievement of +2 students.
7. There will be significant difference in the triple interactional effect of levels of intelligence, emotional maturity and self-concept on the academic achievement of + 2 students.

**METHOD:**

In the present study Descriptive survey method was used.

**SAMPLE:**

In the present study 490 students were selected randomly from +2 grade students of Shimla District of Himachal Pradesh.

**DESIGN OF THE STUDY:**

In the present study 2 x 2 x 2 factorial design was used to analyze the data. There were three independent variables viz Intelligence, Emotional Maturity and Self-Concept. Academic Achievement of the students was taken as dependent variable, upon which the effect of independent variables was studied both in terms of variables taken singly as well as taken together in different combinations. All the three independent variables were varied at two levels each high and low.

**TOOLS USED**

To collect the requisite data for the present study the investigator used:

- Verbal test of General Mental Ability by M.C. Joshi (1956).
- Emotional Maturity scale by Yashvir Singh and Mahesh Bhargave (2006).
- Children's Self-Concept Scale by S.P.Ahluwalia (2001).
- Academic achievement scores of student at +1 level (2008).

**STATISTICAL TECHNIQUE USED:**

In the present study Analysis of variance and t-ratio were used for analysis of data.

**RESULT AND DISCUSSION:**

The complete summary of 2 x 2 x 2 Analysis of Variance (ANOVA) for studying the main effects of Intelligence, Emotional Maturity and Self-Concept and their interactional effects on Academic Achievement is given in Table -1 as under:

**Table-1**

**Complete Summary of Analysis of Variance in a 2 x 2 x 2 Factorial Designs**

Source of Variation	Sum of squares	df	Mean square	f-ratio
Main effects I: Intelligence	1354.02	1	1354.02	37.24**
E: Emotional maturity	4.52	1	4.52	.12 NS
S: Self-Concept	1015	1	1015.32	27.93**
Interaction effects Ix E : Intelligence and Emotional maturity	.1125	1	.1125	.003 NS

IxS : Intelligence and Self-concept	918.01	1	918.01	25.25**
ExS: Emotional maturity and Self-concept	195.31	1	195.31	5.37*
Three way interaction effects IxExS : Intelligence, Emotional maturity and Self-concept	1.71	1	1.71	.047 NS
Error: Within group	2617	72	36.35	
<b>Total</b>	<b>6106</b>	<b>79</b>		

\*\* indicate significance at .01 level.\* indicate significance at .05 level. NS indicate Non-significance

## MAIN EFFECTS

### INTELLIGENCE (I)

The main effect of two levels of intelligence (I) was analyzed over two levels each of Emotional Maturity (E) and Self-Concept (S). Since f-ratio for levels of significance at 1/72 df was found to be highly significant at .01 level of confidence. The f-ratio for levels of intelligence came out to be 37.24 which is more than the table value for 1/72 df at 0.01 level (i.e.6.985).

The mean score for high intelligence group ( $I_1$ ) was found to be 59.6 and for low intelligence group ( $I_2$ ), it came out to be 51.38. The difference between the mean score of  $I_1$  and  $I_2$  thus is  $59.6 - 51.38 = 8.24$ . It shows that there is a distinct difference between the scores of two groups of intelligence. High intelligence group scores significantly more than low intelligence group.

### EMOTIONAL MATURITY (E)

The main effects of two levels of emotional maturity were calculated. The f-value for levels of emotional maturity at 1/72 df was not significant even at .05 level of confidence. The mean score for high emotional maturity group ( $E_1$ ) was found to be 55.73 and for low emotional maturity group ( $E_2$ ) it come out to be 55.25. So the difference between the mean scores of  $E_1$  and  $E_2$  is  $55.73 - 55.25 = .48$  which is not significant at any level of confidence. So, it may be concluded that the difference in the means of academic achievement scores of +2 students is approximately the same irrespective of their emotional maturity.

### SELF-CONCEPT (S)

It is evident from the table -1 that f- ratio for the levels of self- concept came out to be 27.93 which is more than table value for 1/72 df at .01 levels(6.985). So, the obtained value is highly significant at .01 level of confidence.

The mean score for high self-confidence ( $S_1$ ) was found to be 59.05 and for low self-confidence group ( $S_2$ ) it come out to be 51.92. The difference between the mean scores of  $S_1$  and  $S_2$  thus is  $59.05 - 51.92 = 7.13$ . It shows significant difference between the scores of two groups of self- concept. High self- concept group scores significantly better than low self-concept group.

## TWO FACTORS INTERACTION EFFECTS

### IxE (INTELLIGENCE x EMOTIONAL MATURITY)

The f –ratio for intelligence and emotional maturity interaction was .003 which is not significant even at .05 level of confidence (i.e.3.975). This indicates that there is no significant difference in the interactional effect of intelligence and emotional maturity on the academic achievement of + 2 students.

The mean square for I x E interaction is .1125. It indicates that the difference between the mean of I<sub>1</sub> and I<sub>2</sub> for the first level of E(high emotional maturity) are not significantly different from the differences between the means of I<sub>1</sub> and I<sub>2</sub> for the second level of E (low emotional maturity).

### I x S (INTELLIGENCE x SELF –CONCEPT)

From the table -1 f-ratio for IxS interaction i.e. intelligence and self- concept came out to be 25.25 which is more than the table value for 1/72 df at 0.01 level (6.985). So, obtained value is high significant at .01 level of confidence. This indicates that there is a significant difference in the interaction effect of intelligence and self- concept on the academic achievement of +2 students.

As only the global nature of effects are expressed by above significant interaction, a more detailed study was done with the help of t-test, which helped in locating the direction of difference between the mean achievement scores among the four groups i.e. high and high, high and low, low and high and low and low. The results obtained with the help of t-test for four different groups I x S interaction are given in table -2

**Table-2**

#### Interaction between Intelligence and Self-concept

Sr .No	Group	Mean s	SD	SE <sub>M</sub>	Differences between means	SE <sub>D</sub>	t-value
I	I <sub>1</sub> S <sub>1</sub>	66.55	7.14	1.60	i-ii = 66.55-52.65=13.9	2.00	6.95**
					i-iii = 66.55-51.55=15.00	2.37	6.33**
					i-iv = 66.55-51.20 =15.35	1.80	8.53**
ii	I <sub>1</sub> S <sub>2</sub>	52.65	5.33	1.19	ii-iii = 52.65-51.55 =1.1	2.12	.52 NS
					ii-iv = 52.65-51.20 =1.45	1.44	1.006NS
iii	I <sub>2</sub> S <sub>1</sub>	51.55	7.83	1.75	iii-iv = 51.65-51.20 =.35	1.93	.18 NS
iv	I <sub>2</sub> S <sub>2</sub>	51.20	3.68	.82			

\*\*indicate Significance at .0 level, NS indicate non –significance

It is clear from the table-2 that high intelligence x high self- concept (  $I_1 S_1$  ) surpassed the remaining three groups in achievement.  $I_1 S_1$  group appeared with the mean value 66.55 against the mean score of 52.65, 51.55 and 51.20 for the other groups i.e. high intelligence x low self –concept(  $I_1 S_2$  ), low intelligence x high self –concept (  $I_2 S_1$  ) and low intelligence x low self –concept (  $I_2 S_2$  ) groups respectively.

The achievement of high intelligence x high self –concept group (  $I_1 S_1$  ) was found to be significantly better than rest of the three groups i.e. high intelligence x low self –concept (  $I_1 S_2$  ), low intelligence x high self concept (  $I_2 S_1$  ) and low intelligence x low self –concept (  $I_2 S_2$  ).

So high intelligence x high self –concept group stands more responsible for determining the level of achievement (  $t = 6.95$  between i-ii ,  $t- 6.33$  between i-iii and  $t- 8.53$  between i-iv).

The difference between high intelligence x low self –concept (  $I_1 S_2$  ) group and low intelligence x high self concept group (  $I_2 S_1$  ) and low intelligence x low self –concept (  $I_2 S_2$  ) were not found significant. ( $t=.52$  between ii-iii and  $t =1.00$  between ii-iv). The insignificant t values indicate the fact that none of the groups is superior in academic achievement to the other groups and the higher mean of (  $I_1 S_2$  ) group (52.65 as compared to 51.55 of (  $I_2 S_1$  ), and 31.20 of (  $I_2 S_2$  ) leads to believe that this difference may be due to purely a chance factor.

The comparison between low intelligence and high self- concept group (  $I_2 S_1$  ) and low intelligence x low self –concept group (  $I_2 S_2$  ) were not found to be significant (  $t = .18$  between iii-iv). The insignificant t value of .18 underlines the fact that none of the groups is superior in performance to the other group and the higher mean of (  $I_1 S_2$  ) group (51.55 as compared to 51.20 of (  $I_2 S_2$  ) group leads us to believe that the differences is due to chance factor.

**Table-3**

**Interaction between Emotional Maturity and Self-concept**

Sr No	Group	Means	SD	SE <sub>M</sub>	Differences between means	SE <sub>D</sub>	t-value
I	$E_1 S_1$	60.85	8.21	1.83	i-ii = 60.85-50.6 =10.25	2.07	4.95**
					i-iii = 60.85-57.25=3.6	3.23	1.11 NS
					i-iv = 60.85-53.25 =7.6	2.10	3.61**
ii	$E_1 S_2$	50.6	4.25	.95	ii-iii = 50.6 -57.25 =6.65	2.89	2.30*
					ii-iv = 50.6-53.25 =2.65	1.40	1.89NS
iii	$E_2 S_1$	57.25	11.88	2.65	iii-iv = 57.25-53.25 =4.00	2.84	1.41NS
iv	$E_2 S_2$	531.25	4.60	1.02			

\*\*indicate Significance at .01 level, \*indicate Significance at .05 level., NS indicate non-significance.

It is evident from the table -3 that interaction between emotional maturity and self-concept (ExS) was 5.37 which is significant at .05 level (i.e. 3.975) for df 1/72. This indicates that there is significant difference between the mean of  $E_1$  and  $E_2$  at  $S_1$  level and between means of  $E_1$  and  $E_2$  at  $S_2$  level. A detailed study was done with the help of t-test which helped in locating the direction of difference between the mean academic achievement scores among four groups i.e. high and high, high and low, low and high and low and low. The results obtained with t- test for four different groups of E x S interaction are given in above table.

It is clear from the table-3 that high emotional maturity x high self- concept ( $E_1 S_1$ ) surpassed the remaining three groups in achievement.  $E_1 S_1$  group appeared with the mean value 60.85 against the mean score of 50.6, 57.25 and 53.25 for the other groups i.e. high emotional maturity x low self-concept ( $E_1 S_2$ ), low emotional maturity x high self-concept ( $E_2 S_1$ ) and low emotional maturity x low self-concept ( $E_2 S_2$ ) groups respectively.

The achievement of high emotional maturity x high self-concept group was found to be significantly better than the achievement of high emotional maturity x low self-concept group ( $E_1 S_2$ ) as well as low emotional maturity x low self-concept group ( $E_2 S_2$ ) ( $t = 4.95$  between i-ii and  $t = 3.61$  between i-iv). But the differences between  $E_1 S_1$  group and  $E_2 S_1$  group were not found to be significant ( $t = 1.11$  between i-iii) So, the difference between these groups are not predictable on the basis of emotional maturity, therefore the variable of self-concept in this condition stands more responsible for determining the level of academic achievement.

The difference between high emotional maturity x low self-concept ( $E_1 S_2$ ) group and low emotional maturity x high self concept group ( $E_2 S_1$ ) group were found to be significant ( $t = 2.30$  between ii-iii). This means that  $E_1 S_2$  group is significantly better than  $E_2 S_1$  group. However the differences between  $E_1 S_2$  group x  $E_2 S_2$  group were not found to be significant ( $t = 1.89$  between ii-iv). The insignificant t values indicate the fact that none of the groups is superior in academic achievement to the other group and difference in the means of both the groups leads is to believe that difference may be due to chance factor.

The comparison between low emotional maturity x high self-concept group ( $E_2 S_1$ ) and low emotional maturity x low self-concept group ( $E_2 S_2$ ) were not found to be significant ( $t = 1.41$  between iii-iv). So, the differences between the means of both the groups may be purely by chance factor.

### THREE FACTOR INTERACTION EFFECTS I x E x S INTERACTION

The results of analysis of variance in the table -1 indicate f-ratio of .047 for I x E x S, which is not significant for 1/72 df at any level of confidence. This shows clearly that there is no significant difference in this triple interaction effect of intelligence,

emotional maturity and self –concept on academic achievement of +2 students of senior secondary schools.

## CONCLUSIONS

Following conclusion were drawn after the conduct of investigation and analysis of results.

- There is a significant difference in the academic achievement of +2 students in relation to their levels of intelligence. The students with high level of intelligence are significantly higher on academic achievement as compare to those with low level of intelligence.
- There is no significant difference in the academic achievement of +2 students in relation to their levels of emotional maturity. It was found that academic achievement does not vary on the basis of high and low emotional maturity.
- There is a significant difference in the academic achievement of +2 students in relation to their levels of self -concept. Students with high self –concept achieved significantly more than those with low self –concept.
- Intelligence do not interact with emotional maturity to yield significant results.
- Intelligence and self –concept interact significantly with regard to academic achievement. It has been found that difference between the groups of intelligence ( $I_1$  and  $I_2$ ) is significantly more for  $S_1$  level of self –concept than the difference between the same groups for  $S_2$  level of self –concept.
- There is a significant difference in the interactional effect of levels of emotional maturity and self –concept on the academic achievement. The difference between the two groups of emotional maturity (  $E_1$  and  $E_2$ ) is significantly more for  $S_1$  level of self –concept than the difference between the same group for  $S_2$  level of self –concept . There is no parallel study available for supporting or contradicting this finding.

## EDUCATIONAL IMPLICATIONS

- The teacher should give due consideration to the differences in the mental abilities of the students in the pursuit of educational objectives.
- The teacher should motivate the students fully so that their personality could develop to the maximum.
- Parents and teachers should make the children feel that they are accepted and recognized which help them to become emotionally mature and hence enhancing self understanding in the children and attitude towards school and education.
- There should be continuous and comprehensive evaluation of the students throughout the whole academic session which will increase the academic achievement of the students.

## SUGGESTIONS FOR FURTHER RESEARCH

- ❖ The present investigation was carried on only with three personality variables i.e. Intelligence, Emotional Maturity and Self –concept. However, there are other personality variables affecting the academic achievement which were left

unfocused in the present investigation because it is not possible to include all personality variables in a single study.

- ❖ The present study was confined to the students of +2 grade only. It is suggested that similar investigation may be extended to the school children of other classes or standard.
- ❖ A parallel study may be done on similar pattern at college and University level.
- ❖ A comparative study of government schools and private schools may be made in the light of the variables under study taking into consideration the boys and girls strata.
- ❖ A similar study may be conducted on students belonging to some other district of Himachal Pradesh.

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