

## An Effect of Boys Mental Health, School Adjustment and Socio-Economic Status on Academic Achievement in Mathematics among Secondary School Students.

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### Abstract :

The purpose of the study was to analyze independent and combined effects of variables viz, mental health (high-low), school adjustment (high-low) and socio-economic status (high-low) on Academic Achievement in Mathematics. The sample of the present study includes 340 students selected randomly from secondary schools of Hubli-Dharwad corporation area. The study revealed that; (i) The boys with high mental health will influence more on academic achievement of students in mathematics than the boys with low mental health; (ii) The boys with high mental health and high school adjustment will influence more on academic achievement of students in mathematics than the boys with low mental health and low school adjustment; (iii) The boys with high mental health, high school adjustment and low socio-economic status will influence more on academic achievement of students in mathematics than the boys with low mental health, low school adjustment and high socio-economic status.

### Introduction :

In many parts of the world, families and schools are the strongest institutions in the child's life. School play a crucial and a formative role in the spheres of cognitive, language, emotional, social and moral development of children. Schools have an unprecedented opportunity to improve the lives of young people with nation moving towards a commitment to universal education, schools are finding it necessary to expand their roles by providing health services to deal with the factors interfering with schooling.

### Rationale for the Study :

#### i. Mental health :

**Prasanna (1984)** conducted a study to identify the mental health variables which discriminated between high and low achievers among the total sample and sub-samples classified on the basis of sex and area of residence and found that, all the mental health variables studied discriminated between high and low achievers; high achievers had higher mean scores than low achievers. **Hartley and Melinda (1998)** studied the relationship between disruptive behaviour, attention and academic achievement and revealed that, disruptive behaviours are not predictors of academic achievement but overall measures of intelligence were better predictors. **Raj and Sreethi (2000)** studied academic achievement as related procrastination behaviour and study habits. Results revealed that, procrastination behaviour lead to improper study habits which further lead to lower academic achievement.

#### ii. School Adjustment :

**Reddy (1978)** studied that related academic adjustment of scholastic achievement of secondary school pupils and found that, academic adjustment was significantly related scholastic performance. **Walberg et al. (1986)** collected data from national sample and found that, academic achievement was related to ability, motivation amount of home work, school and class environment, home environment, sex and race. **Jyothi (2000)** studied to explore the extent of relationship between scholastic achievement and academic adjustment and found that academic achievement was higher among those having higher academic adjustment and academic adjustment positively influenced academic achievement.

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### iii. Socio-Economic Status :

Misra (1986) conducted a study on influence of socio-economic status on academic achievement of higher secondary students and revealed that, there was a positive relationship between SES and academic achievement of students. Cherian (1992) investigated the relationship between parents' education and academic achievement and found that positive significant relationship between academic achievement and parental education. Grinion (1999) examined the relationship between family SES and academic achievement and found that, poverty had more deleterious effects on boys' academic achievement than on girls' academic achievement.

The review of studies conducted so far clearly shows that though mental health, school adjustment and socio-economic status of students are thoroughly investigated, these studies examined their effect on dependent variable separately. There is a need to study the interaction effect of these variable on dependent variable. Therefore, the present study is an effort to investigate the interaction effect of students mental health, school adjustment and students socio-economic status on academic achievement of students in mathematics.

### Objectives :

1. To study the effect of boys Mental Health on Academic Achievement in Mathematics.
2. To study the effect of boys School Adjustment on Academic Achievement in Mathematics.
3. To study the effect of boys Socio-economic Status on Academic Achievement in Mathematics.
4. To study the interaction effect of boys Mental Health and School Adjustment on Academic Achievement in Mathematics.
5. To study the interaction effect of boys Mental Health and Socio-economic Status on Academic Achievement in Mathematics.
6. To study the interaction effect of boys School Adjustment and Socio-economic Status on Academic Achievement in Mathematics.
7. To study the interaction effect of boys Mental Health, School Adjustment and Socio-economic Status on Academic Achievement in Mathematics.

### Hypotheses :

1. Effects of high and low Mental Health of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.
2. Effects of high and low School Adjustment of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.
3. Effects of high and low Socio-economic Status of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.
4. Interaction effects of Mental Health X School Adjustment of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.
5. Interaction effects of Mental Health X Socio-economic Status of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.
6. Interaction effects of School Adjustment X Socio-economic Status of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.
7. Interaction effects of Mental Health X School Adjustment X Socio-economic Status of boys differ significantly in terms of their influence on Academic Achievement in Mathematics.

**Research Design :**

The present study is the descriptive study where a survey was undertaken to measure the scores on Mental Health, School Adjustment and Socio-Economic Status of students of IX standard of Hubli-Dharwad Corporation area with regard to their interaction effect on academic achievement in Mathematics.

**Research Methodology :**

**Sample :** Using random sampling technique 340 students studying in IX standard were drawn among the government, private-aided and unaided secondary schools of Hubli-Dharwad Corporation area.

**Tools :** The following tools were used to collect the essential data;

i) Mental health status scale (1984) developed by K. C. Baby Prasanna and Mercy Abraham. The inventory consists of 128 items on 16 components of mental health. The reliability was estimated by test retest method and found to be 0.78.

ii) School Adjustment Inventory (1964) developed by Nirmalkumar Bhaiga. It consists of 165 items distributed under five categories covering all the main aspects of school. The reliability of tool was found to be 0.82.

iii) Socio-Economic Status(1999) developed by S.D Puranik was used. The reliability of the tool was found to be 0.739 by test and retest method.

**Data Collection :**

Data pertaining to students mental health, school adjustment, socio-economic status and academic achievement in mathematics was collected by administering the above tools to the 340 students studying in government, private-aided and unaided secondary schools of Hubli-Dharwad corporation area using random sample technique

**Results :**

The data were analyzed using 3-way ANOVA technique with a view to identify independent and combined effect of selected variables on Academic Achievement. The results of the analysis are given in Table-1 and 2.

**Analysis of Data Pertaining to 'Boys' :**

**Table-1 : Summary Table of ANOVA with Respect to Boys**

SV.	DF	SS	MSS	F-Value	p-Value	Signi.
Main Effects						
MH (A)	1	489.88	489.88	4.8724	<0.05	S
SA (B)	1	180.99	180.99	1.8001	>0.05	NS
SES (C )	1	218.75	218.75	2.1757	>0.05	NS
2way Interactions						
MH x SA	1	633.88	633.88	6.3046	<0.05	S
MH x SES	1	102.51	102.51	1.0195	>0.05	NS
SA x SES	1	99.15	99.15	0.9862	>0.05	NS
3-way Interactions						
MH x SA x SES	1	450.24	450.24	4.4781	<0.05	S
Error	332	33380.00	100.54			
Total	339.00	35555.39				

NS = Not Significatn

**Findings :**

1. The boys with high Mental health will influence more on academic achievement of students in mathematics than the boys with low Mental health.
2. There is no significant difference between the effects of boys high and low School adjustment in terms of their influence on academic achievement of students in mathematics.
3. There is no significant difference between the effects of boys high and low Socio-economic status in terms of their influence on academic achievement of students in mathematics.
4. There is a significant difference between the interaction effects of boys high/low Mental health and high/low School adjustment in terms of their influence on academic achievement of students in mathematics.
5. There is no significant difference between the interaction effects of boys high/low Mental health and high/low Socio-economic status in terms of their influence on academic achievement of students in mathematics.
6. There is no significant difference between the interaction effects of boys high/low School adjustment and high/low Socio-economic status in terms of their influence on academic achievement of students in mathematics.
7. There is a significant difference between the interaction effects of boys high/low Mental health, high/low School adjustment and high/low Socio-economic status in terms of their influence on academic achievement of students in mathematics.

**Multiple Comparison of Means – ‘Boys’ :**

Scheffe’s simultaneous confidence intervals for all the possible treatment groups pertaining to the boys are given below:

**Table – 2 : Comparison of Means of Treatment Groups on**

Treatment	Means		95% CI		P Value	Signi.
$a_1b_1 \times a_1b_2$	57.2582	57.3050	3.1563	3.0627	<0.05	S
$a_1b_2 \times a_2b_1$	57.3050	57.3472	2.9118	2.8274	<0.05	S
$a_1b_2 \times a_2b_2$	57.3050	55.5105	1.2240	4.8130	<0.05	S
$a_1b_1c_2 \times a_2b_2c_1$	56.8205	54.3030	1.8319	6.8669	<0.05	S
$a_1b_2c_1 \times a_1b_2c_2$	58.2222	55.6863	1.7093	6.7811	<0.05	S

**Boys – Scheffe’s Simultaneous Confidence Intervals**

**Note :**

- Comparison of other treatment groups of Boys were found to be not significant.
- Higher the mean scores indicates higher influence of predictor variables on criterion variable.

**The above table reveals the following :**

1. The boys with high Mental health and high School adjustment will influence more on academic achievement of students in mathematics than the boys with high Mental health and low School adjustment.

2. The boys with high Mental health and low School adjustment will influence more on academic achievement of students in mathematics than the boys with low Mental health and high School adjustment.
3. The boys with high Mental health and low School adjustment will influence more on academic achievement of students in mathematics than the boys with low Mental health and low School adjustment.
4. The boys with high Mental health, high School adjustment and low Socio-economic status will influence more on academic achievement of students in mathematics than the boys with low Mental health, low School adjustment and high Socio-economic status.
5. The boys with high Mental health, low School adjustment and high Socio-economic status will influence more on academic achievement of students in mathematics than the boys with high Mental health, low School adjustment and low Socio-economic status.

#### **Educational Implications :**

- Mental hygiene should be given importance in pre-service and in-service training of the teachers.
- Mental Health and Academic Achievement are positively related, just as good mental health facilities Academic Achievement, so does Academic achievement favourably affect the Students' Mental Health.
- For promoting mental health and academic achievement the teachers should be trained in guidance and counseling.
- Students showing disturbance should be referred to the specialists.
- Co-curricular activities should be given importance to promote the mental health of students.
- There should be provision for continuous evaluation of mental health programme.

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