

**Relationship Between Emotional Intelligence and Math Abilities among  
Secondary School Students**

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**Abstract:**

*The study was designed to investigate the influence of Emotional Intelligence on Math abilities of Secondary School Students. A total of 494 students are selected from Chikodi educational district. Emotional Intelligence scale developed by Ankool Hythe, Pithe & Dhar and Math Abilities Test prepared and standardized by Researcher were used for data collection. The simple regression and the major statistical tools used for data analysis. Findings from the study revealed that; emotional intelligence and math abilities when combined, jointly predicted the achievement of secondary school students. It is recommended that emotional intelligence, math abilities should be taught as a separate course with the aim of enhancing students achievement and positive attitude towards learning mathematics*

**Key words :** Emotional Intelligence, Math Abilities Emotional Intelligence

Mayer and Peter Salovey (1997) defined Emotional Intelligence as, "a type of social intelligence, that involves the ability to monitor one's own and other emotions, to discriminate among them, and to use the information to guide one's thinking and actions"

Goleman (1995) described emotional intelligence as an ability that includes self-awareness, impulse control, persistence, zeal, self-motivation, empathy and social adeptness.

Emotional intelligence and its components (i.e. self awareness, empathy, self motivation, emotional stability, managing relations, integrity, self development, value orientation, commitment and altruistic behavior

**Math Ability**

Ability to make and use generalizations often quite quickly. One of the basic abilities, easily detectable even at the level of primary school: after solving a single example from a series, a child immediately knows how to solve all examples of the same kind. Rapid and sound memorization of mathematical material. Ability to concentrate on mathematics for long periods without apparent signs of tiredness. Ability to offer and use multiple representations of the same mathematical object. (For example, a child switches easily between representations of the same function by tables, charts, graphs, and analytic expressions.)

An instinctive tendency to approach a problem in Different ways: even if a problem has been already solved, a child is keen to find an alternative solution. Ability to utilize analogies and make connections. Preparedness to link two (or more) elementary procedures to construct a solution to a multi-step problem. Ability to recognize what it means to "know for certain". Ability to detect unstated assumptions in a problem, and either to explicate and utilize them, or to reject the problem as ill-defined. A distinctive tendency for "economy of thought," striving to find the most economical ways to solve problems, for clarity and simplicity in a solution. Math abilities and its components i.e. knowledge abilities, comprehensive abilities, application abilities, analysis abilities, reasoning abilities and inductive & deductive abilities from secondary school students..

**Objectives Of The Study:**

The present study was designed with the following general objectives in view:

1. To study the relationship between secondary school boys & Girls Emotional Intelligence factors and Math Abilities.

2. To study the relationship between Urban & Rural secondary school Students Emotional Intelligence factors and Math Abilities.
3. To study the relationship between Government & Private secondary school Students Emotional Intelligence factors and Math Abilities.
4. To study the relationship between Kannada, English, Marathi and Urdu medium secondary school Students Emotional Intelligence factors and Math Abilities.

**Population, Sample And Sampling Technique :**

The population for the present study was all those students who were studying mathematics subject at secondary schools in Chikodi Educational District. Sampling was done in order to get school representation and the student representation. 50 secondary schools were drawn randomly among the government and private schools. The students were drawn in such a way that the students studying mathematics subject alone could be included in the sample. Thus 494 students studying mathematics subject in secondary schools were drawn as the sample. Therefore the technique of sampling adopted was stratified random sampling technique in the case of students and random sampling technique in the case schools.

**Variables:**

Dependent variable: Math Abilities . Independent variable: Emotional Intelligence .

Moderate variables: Gender, locality, type of management, mediums.

**Tools :** The following tools were used for the following data.

1. Emotional intelligence scale developed by Ankool Hythe, Pithe and Dhar, (2002)
2. Math Abilities Test constructed by investigator.

**Collection Of Data :**

To collect the necessary data for the present study tools were developed by Emotional Intelligence scale developed by Ankool Hythe, Pithe and Dhar (2002). Math Abilities Test in mathematics constructed by investigator. The above tools were taken to the different secondary schools from Chikodi Educational District. Even their personal data relating to sex, location, type of schools, class and subject etc. was administered to the same group of students who have responded for Emotional Intelligence scale and Math Abilities. for school students.

**Statistical Techniques Used :** The investigator has used simple linear regressions analysis for the study

Hypothesis 1: Emotional intelligence would not be significant predictor of math abilities of secondary school students as a whole

To achieve this hypothesis, the simple linear regression analysis was performed and the results are presented in the following table.

**Table: Simple linear regression of math abilities of secondary school students by their emotional intelligence as a whole**

Independent variables	Regression coefficient	SE of reg. coefficient	t-value	p-level
Constant	-131.7209	2.2104	-59.5928	0.0001*
Emotional intelligence	1.2834	0.0161	79.7333	0.0001*
F(1,492)=6357.42, p<0.05, S, Std.Error of estimate: 4.1403				

\*p<0.05

From the results of the above table, it can be seen that, the effect of emotional intelligence on math abilities of secondary school students is found to be positive and statistically significant at 5% level of significance. It means that, the math ability of secondary school students is influenced by

emotional intelligence. Therefore, the simple linear regression equation of academic achievement of students of secondary schools (Y) in terms of emotional intelligence was found to be under: Math ability (Y) = -131.7209+1.2834X. The F-ratio (6357.42) was found to be significant at 5% level. Thus, the null hypothesis is rejected and alternative hypothesis is accepted. It means that estimation of math ability of secondary school students is possible on the basis of the predictor i.e. emotional intelligence. Further, the regression equation shows that emotional intelligence can be used to prediction of math ability of secondary school students.

**Hypothesis2:** Emotional intelligence would not be significant predictor of math abilities of boy and girl students of secondary schools

To achieve this hypothesis, the simple linear regression analysis was performed and the results are presented in the following table.

**Table: Simple linear regression of math abilities of boy and girl students of secondary schools by their emotional intelligence .**

Gender	Independent variables	Regression coefficient	SE of reg. coefficient	t-value	p-level
Boys	Constant	-127.1615	3.1135	-40.8425	0.0001*
	Emotional intelligence (X)	1.2525	0.0229	54.6661	0.0001*
	F(1,245)=2988.42, p<0.05, S, Std.Error of estimate: 4.4309				
Girls	Constant	-139.3248	3.1266	-44.5614	0.0001*
	Emotional intelligence (X)	1.3355	0.0225	59.2678	0.0001*
	F(1,245)=3512.72, p<0.05, S, Std.Error of estimate: 3.7465				

\*p<0.05

From the results of the above table, it can be seen that,

- The effect of emotional intelligence on math abilities of secondary school boy students is found to be positive and statistically significant at 5% level of significance. It means that, the math ability of secondary school boy students is influenced by emotional intelligence. Therefore, the simple linear regression equation of academic achievement of boy students of secondary schools (Y) in terms of emotional intelligence was found to be under: Math ability (Y) = -127.1615+1.2525X. The F-ratio (2988.42) was found to be significant at 5% level. Thus, the null hypothesis is rejected and alternative hypothesis is accepted. It means that estimation of math ability of secondary school boy students is possible on the basis of the predictor i.e. emotional intelligence. Further, the regression equation shows that emotional intelligence can be used to prediction of math ability of secondary school boy students.

The effect of emotional intelligence on math abilities of secondary school girl students is found to be positive and statistically significant at 5% level of significance. It means that, the math ability of secondary school girl students is influenced by emotional intelligence. Therefore, the simple linear regression equation of academic achievement of girl students of secondary schools (Y) in terms of emotional intelligence was found to be under: Math ability (Y) = -139.3248+1.3355X. The F-ratio (3512.72) was found to be significant at 5% level. Thus, the null hypothesis is rejected and alternative hypothesis is accepted. It means that estimation of math ability of secondary school girl students is possible on the basis of the predictor i.e. emotional intelligence. Further, the regression equation shows that emotional intelligence can be used to prediction of math ability of secondary school girl students.

**Hypothesis 3:** Emotional intelligence would not be significant predictor of math abilities of rural and urban secondary school students

To achieve this hypothesis, the simple linear regression analysis was performed and the results are presented in the following table.

**Table32: Simple linear regression of math abilities of rural and urban secondary school students by their emotional intelligence**

Location	Independent variables	Regression coefficient	SE of reg. coefficient	t-value	p-level
Rural	Constant	-132.2509	3.1915	-41.4385	0.0001*
	Emotional intelligence (X)	1.2886	0.0229	56.1737	0.0001*
	F(1,220)=3155.50, p<0.05, S, Std.Error of estimate: 3.9431				
Urban	Constant	-130.7255	3.1090	-42.0473	0.0001*
	Emotional intelligence (X)	1.2748	0.0229	55.6995	0.0001*
	F(1,270)=3102.41, p<0.05, S, Std.Error of estimate: 4.3006				

\*p<0.05

From the results of the above table, it can be seen that,

- The effect of emotional intelligence on math abilities of students of rural secondary schools is found to be positive and statistically significant at 5% level of significance. It means that, the math ability of students of rural secondary schools is influenced by emotional intelligence. Therefore, the simple linear regression equation of academic achievement of students of rural secondary schools (Y) in terms of emotional intelligence was found to be under: Math ability (Y) = -132.2509+1.2886X. The F-ratio (3155.50) was found to be significant at 5% level. Thus, the null hypothesis is rejected and alternative hypothesis is accepted. It means that estimation of math ability of students of rural secondary schools is possible on the basis of the predictor i.e. emotional intelligence. Further, the regression equation shows that emotional intelligence can be used to prediction of math ability of students of rural secondary schools.
- The effect of emotional intelligence on math abilities of students of rural secondary schools is found to be positive and statistically significant at 5% level of significance. It means that, the math ability of students of rural secondary schools is influenced by emotional intelligence. Therefore, the simple linear regression equation of academic achievement of students of rural secondary schools (Y) in terms of emotional intelligence was found to be under: Math ability (Y) = -130.7255+1.2748X. The F-ratio (3102.41) was found to be significant at 5% level. Thus, the null hypothesis is rejected and alternative hypothesis is accepted. It means that estimation of math ability of students of rural secondary schools is possible on the basis of the predictor i.e. emotional intelligence. Further, the regression equation shows that emotional intelligence can be used to prediction of math ability of students of rural secondary schools.

### Conclusion

To conclude the study, the effect of emotional intelligence on math abilities of secondary school students is found to be positive and statistically significant at 5% level of significance. It means that, the math ability of secondary school students is influenced by emotional intelligence. Math ability of secondary school boy students is influenced by emotional intelligence. Thus the emotional plays an important role in the achievement of math abilities.

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