The Relation between Emotional Intelligence and Achievement in Mathematics of the Secondary School Students

Kartik Chandra Sarkar
Officer-in-Charge, Govt. Teachers’ Training College, Malda, P.O & Dist: Malda, West Bengal, India

INTRODUCTION

One of the main objectives of the educational institution, teachers and parents is to produce successful individuals for the family as well as for the nation. So the parents and the institutions always expect students with high I.Q. But only I.Q. is not sufficient to make a person successful. The presence of emotional intelligence in a person is of ardent need for success in life. Recently emotional intelligence has become a matter of great interest to the researcher. Present study shows that the intelligence quotient is not the measure of success in life (Goleman, 1995). Emotional intelligence plays a great role for success. But what the emotional intelligence actually is. Emotional intelligence is the capability of individuals to recognize their own and other people’s emotion and to handle interpersonal relationships judiciously and empathetically. Emotional intelligence use emotional information to guide thinking and behavior and manage and adjust emotions to adapt to environments and to achieve one’s goal. Emotional intelligence is not less important than intelligence quotient for the cognitive development of the students. On the other hand, among all the other academic subjects, mathematics plays a very important role in achieving general objectives of education. So mathematics is a subject of great concern to the students as well as to the guardians and teachers. Most of the students show poor performance in mathematics. Many of them have mathematics phobia and all of these may be governed by emotional intelligence. A person having less emotional intelligence will not bother about what is happening to his achievement in a particular subject but a person with high emotional intelligence may think differently. Emotional intelligence may affect every part of a person’s life and as a consequence his academic life also. So, emotional intelligence may have effect on the achievement in mathematics as I.Q has. This type of thinking motivated the investigator to test whether there is any relationship between emotional intelligence and achievement in mathematics.

HYPOTHESES

The following null hypotheses are made

**H01:** There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary school students

**H02:** There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary rural school students.

**H03:** There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary urban school students.

**H04:** There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary rural male school students.

**H05:** There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary rural female school students.
H06: There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary urban male school students.

H07: There is no significant relationship between emotional intelligence and achievement in mathematics of the secondary urban female school students.

**Methodology**

The methodology as followed by the researcher is correlational survey study. In this paper the emotional intelligence of the students are measured by Emotional Intelligence Scale and achievement in mathematics is measured by Achievement Test and the correlation coefficients are determined to test the hypotheses as stated above. The significance of the correlations are also tested by t-test.

**Population:** All the students of Malda district comprise the population of the study.

**Sample:** To study the emotional intelligence of the students of Malda district a sample of 343 students is taken from one randomly selected urban boys’ school, one randomly selected urban girls’ school and two randomly selected rural co-educational schools. The location-wise (i.e., rural or urban) and gender-wise distribution of the sample is shown in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>70</td>
<td>91</td>
<td>161</td>
</tr>
<tr>
<td>Female</td>
<td>95</td>
<td>87</td>
<td>182</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>178</td>
<td>343</td>
</tr>
</tbody>
</table>

**Tools:** The emotional intelligence of the students are measured by the Emotional Intelligence Scale as developed and standardized by A.K. Singh and Shruti Narain (2014), the reliability coefficient being 0.86. This test contains 31 items on four dimensions. These dimensions are understanding emotions, understanding motivations, empathy and handling relations. There are four items on understanding emotions, eight items on understanding motivations, ten items on empathy and nine items on handling relations. The correct answer will be rewarded by score +1 and wrong answers are given 0 score. The maximum time for answering of these 31 items is 15 minutes. On the other hand the achievement in mathematics is measured by the Achievement test developed and standardized by the researcher, the coefficient of reliability being 0.82.

**Data Analysis:** The emotional intelligence score of the students are found out by Emotional Intelligence Scale as developed by Singh and Narain (2014) and the achievement test scores of the students in mathematics are found out by the Achievement Test developed by the researcher. The mean and S.D. of the scores are shown in table-1

<table>
<thead>
<tr>
<th>Mean of A.T. score</th>
<th>S.D of A.T. score</th>
<th>Mean of E.I. score</th>
<th>S.D of E.I. score</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students</td>
<td>22.76335</td>
<td>8.150247</td>
<td>16.70845</td>
</tr>
<tr>
<td>Rural students only</td>
<td>22.33939</td>
<td>8.076235</td>
<td>16.47273</td>
</tr>
<tr>
<td>Urban students only</td>
<td>23.1573</td>
<td>8.221371</td>
<td>16.92697</td>
</tr>
<tr>
<td>Rural male students only</td>
<td>24.55714</td>
<td>7.501953</td>
<td>17.68571</td>
</tr>
</tbody>
</table>

The correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the students is calculated and it is 0.680182. Which show that the correlation is positive and medium? The significance of the correlation coefficient is tested by t-test. The t value of the correlation coefficient is 17.1345 and the degree of freedom is 341. The critical value of t at 341 degree of freedom and 0.01 level of significance is 2.590324. Since t = 17.1345 > 2.590324 (Critical value). So, H01 is rejected at 0.01 level of significance. That is, there is a significant positive correlation between the achievement in mathematics and emotional intelligence of all the students (rural and urban together) at 0.01 level. To test the hypothesis H02 the correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the rural students is calculated and it is 0.698064 and degree of freedom is 163. Since t = 12.44657 > 2.604052 (Critical value at 0.01 level of significance and 163 degree of freedom). So, H02 is rejected at 0.01 level of significance. That is, there is a significant positive correlation between the achievement in mathematics and emotional intelligence of all rural school students at 0.01 level. To test the hypothesis H03 the correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the urban students is calculated and it is 0.662528 and the degree of freedom is 176. Since t = 11.73436 > 2.604052 (Critical value at 0.01 level of significance and 176 degree of freedom). So, H03 is rejected at 0.01 level of significance. That is, there is a significant positive correlation between the achievement in mathematics and emotional intelligence of all urban school students at 0.01 level. To test the hypothesis H04 the correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the rural male students is calculated and it is 0.761003 and the degree of freedom is 68. Since t = 9.672984 > 2.650081 (Critical value at 0.01 level of significance and 68 degree of freedom). So, H04 is rejected at 0.01 level of significance. That is, there is a significant positive correlation between the achievement in mathematics and emotional intelligence of all rural male school students at 0.01 level. The correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the rural female students is calculated and it is 0.631565 and the degree of freedom is 93. Since t = 7.855452 > 2.629732 (Critical value at 0.01 level of significance and 93 degree of freedom). So, H05 is also rejected at 0.01 level of significance. That is, there is a significant positive correlation at 0.01 level between the achievement in mathematics and emotional intelligence of all rural female school students. The correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the urban male students is calculated and it is 0.670124 and the degree of freedom is 89. Since t = 8.517179 > 2.632204 (Critical value at 0.01 level of significance and 89 degree of freedom). So, H06 is also rejected at 0.01 level of significance. That is, there is a
significant positive correlation at 0.01 level between the achievement in mathematics and emotional intelligence of all urban male school students.

Lastly the correlation coefficient between the achievement test scores in mathematics and emotional intelligence scores of all the urban female students is calculated and it is 0.658036 and the degree of freedom is 85. Since \( t = 8.056844 > 2.634914 \) (Critical value at 0.01 level of significance and 85 degree of freedom). So, \( H_0 \) is also rejected at 0.01 level of significance. That is, there is a significant positive correlation at 0.01 level between the achievement in mathematics and emotional intelligence of all urban female school students.

**CONCLUSION**

The study shows that the emotional intelligence is positively correlated with the achievement in mathematics for all students together, for rural school students, for urban school students, for rural male students, for rural female students and urban male as well as urban female students and the correlations are medium positive in all the cases. The correlations are also significant at 0.01 level of significance. Thus it is seen that the achievement in mathematics is influenced by the existence of emotional intelligence in them. So, besides the other activities in school curriculum the training for emotional intelligence development of the students should be included in the curriculum.

**REFERENCES**


