“A STUDY OF EMOTIONAL AND COGNITIVE DEVELOPMENT OF SECONDARY SCHOOL STUDENTS IN RELATION TO THEIR ACADEMIC ACHIEVEMENT”

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Abstract:

In this article Emotional development refers to the ability to understand and manage one’s emotions. Academic performance refers to the grades obtained by the students. Emotions play a key role in behavior and influence the Academic Achievements. The aim of the study is to find the relationship between Emotional Development, Cognitive Development and Academic performance of adolescents. Null hypothesis was adopted. Sample consists of seven districts urban and rural colleges. College students belonging to the age group of 13 to 18 years, purposive sampling method was adopted. The results are analysed by computing Pearson correlation and the results indicate that there is no significant relationship between emotional development and academic performance. Independent sample t-test is computed to study the gender difference in emotional maturity and academic performance and the result indicates that there is a significant gender difference in emotional development and academic performance.

Reasoning ability directly affects academic performance, while selective attention and short-term temporal memory indirectly affect academic performance through reasoning ability. Rohde and Thompson (2007) found that cognitive ability directly predicts academic performance, and the correlation is as high as.

Key words:- Emotional development, cognitive development, Academic Achievement.
Introduction

Education is the most important invention of mankind. Man without education would still be living just like an animal. It is education, which transformed man from a mere ‘two-legged animal’ into human being. New theories of development have been introduced and are gradually replacing the traditional theory. The academic achievement of the students is effected by many factors. These factors are deciding Academic achievement of the students. Among those students’ factors like Social development, Cognitive development and Emotional development are affecting most on academic achievement. All these factors which are affecting are having inner relationship. The high Social-emotional and cognitive development skills that help the student to achieve success in the various spheres of life both at word and family, social-emotional and cognitive development is an ability to monitor one’s own and other emotions, to discriminate among them and to use the information to guide one’s thinking and performance.

METHODOLOGY OF THE STUDY

The researches will adopt the survey method of research to study the social, emotional and cognitive development of secondary school students in relation to their Academic Achievement in Karnataka with reference to Koppal district. The researcher will use stratified Random sampling technique for selecting the sample from the population. The stratification will be done on the basis of gender and locality of students. The sample consists of government aided and private school students from the schools in Koppal district.

SAMPLING TECHNIQUES EMPLOYED

1400 (total sampling size) Koppal District

Rural area (700)

Urban (700)

Govt Aided Unaided

Govt Aided

Unaided

200

100

200

200

100

100

100

100

100

100

100

100

100

100

100

Male

Female

Male

Female

Male

Female

Male

Female

Male

Female

Male

Female

10

Sample of 1400 secondary school students will be randomly selected from different secondary schools representing from urban and rural with types of management i.e. government, aided and private. Similarly the same number of (size) of sample will be drawn from other talukas respectively.
Objectives

The present research was undertaken with the following general objectives in view.

1. To study the academic achievement, emotional ability, cognitive ability of secondary school students.

2. To study and find out the interaction effects of demographic characteristics, emotional ability, cognitive ability on academic achievement of secondary school students.

3. To find and assess the relationships of emotional ability, cognitive ability with academic achievement of secondary school students.

4. To find and assess the combined influence of emotional ability, cognitive ability on academic achievement of secondary school students.

5. To find and assess the direct and indirect effects of emotional ability, cognitive ability on academic achievement of secondary school students.

Variables Considered in the Study

The variables included in the study are Dependent variable Academic achievement of secondary school students.

Independent variable.

• Emotional ability and

• Cognitive ability

Moderator Variables

• Location (Urban and Rural)

• Type of management (Government, Aided and Private)

Research hypotheses, findings and conclusions

Inferential statistics

Hypothesis 1: There is no significant difference between urban and rural secondary school students with respect to Emotional ability scores.

Hypothesis 2: There is no significant difference between urban and rural secondary school students with respect to Cognitive ability scores.

Hypothesis 3: There is no significant difference between government, aided and private secondary school students with respect to their academic achievement scores.

H0 1: There is no significant difference between urban and rural secondary school students with respect to Emotional ability scores.

To test the above hypothesis, the independent t test was applied and the results are presented in the following table.
Table: Outcome of independent t test difference between urban and rural secondary school students with respect to Emotional ability scores.

<table>
<thead>
<tr>
<th>Location</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>700</td>
<td>18.47</td>
<td>5.75</td>
<td>0.22</td>
<td>2.2822</td>
<td>0.0226</td>
</tr>
<tr>
<td>Rural</td>
<td>700</td>
<td>17.85</td>
<td>4.31</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results of the above table, it is seen that, the calculated value of independent t test is 2.2822 with p value=0.0226. The critical value of t at 5% level of significance with 1398 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is greater than the critical value i.e. 3.4838>1.9600. It means that, a significant difference between urban and rural secondary school students with respect to emotional ability scores. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. In another word, the urban secondary school students have significant and higher emotional ability scores as compared to rural students. The mean and SD scores are presented in the following figure.

Figure: Comparison of urban and rural secondary school students with respect to their emotional ability scores.
H0 2: There is no significant difference between urban and rural secondary school students with respect to Cognitive development scores

To test the above hypothesis, the independent t test was applied and the results are presented in the following table.

Table: Outcome of independent t test difference between urban and rural secondary school students with respect to cognitive development scores

<table>
<thead>
<tr>
<th>Location</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>700</td>
<td>101.67</td>
<td>14.96</td>
<td>0.57</td>
<td>8.5787</td>
<td>0.0001,S</td>
</tr>
<tr>
<td>Rural</td>
<td>700</td>
<td>94.48</td>
<td>16.40</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results of the above table, it is seen that, the calculated value of independent t test is 8.5787 with p value=0.0001. The critical value of t at 5% level of significance with 1398 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is greater than the critical value i.e. 3.4838>1.9600. It means that, a significant difference between urban and rural secondary school students with respect to cognitive ability scores. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. In another word, the urban secondary school students have significant and higher cognitive development scores as compared to rural students. The mean and SD scores are presented in the following figure.
Figure: Comparison of urban and rural secondary school students with respect to their cognitive development scores.

H0 3: There is no significant difference between government, aided and private secondary school students with respect to their academic achievement scores. To test the above hypothesis, the one way ANOVA test was applied and the results are presented in the following table.

Table: Outcome of one way ANOVA test difference between government, aided and private secondary school students with respect to their academic achievement scores.

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>Degrees of freedom</th>
<th>Sum of squares</th>
<th>Mean sum of squares</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between managements</td>
<td>2</td>
<td>5500.8852</td>
<td>2750.4426</td>
<td>26.6042</td>
<td>0.0001,S</td>
</tr>
<tr>
<td>Within managements</td>
<td>1397</td>
<td>144427.3550</td>
<td>103.3839</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1399</td>
<td>149928.2402</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the results of the above table, the calculated value of F is 26.6042 with 0.0001. The critical value of F at 5% level of significance with 2 and 1397 degrees of freedom is 3.0000. It clearly shows that, the calculated value of F is greater than the critical value i.e. 26.6042 >3.0000. It means that, a significant difference between government, aided and private secondary school students with respect to academic achievement scores. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. In another word, the government, aided and private secondary school students have different academic achievement scores.

Further, to know the pair wise comparisons of government, aided and private secondary school students with respect to academic achievement scores by applying the Tukeys multiple posthoc procedures and the results are presented in the following table.

Table: Pair wise comparisons of government, aided and private secondary school students with respect to academic achievement scores by Tukeys multiple posthoc procedures

<table>
<thead>
<tr>
<th>Managements</th>
<th>Government</th>
<th>Aided</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>61.55</td>
<td>66.34</td>
<td>63.27</td>
</tr>
<tr>
<td>SD</td>
<td>10.17</td>
<td>10.16</td>
<td>10.17</td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aided</td>
<td>p=0.0001,S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>p=0.0262,S</td>
<td>p=0.0001,S</td>
<td></td>
</tr>
</tbody>
</table>

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

- A significant difference between government and aided secondary school students with respect to academic achievement scores (p=0.0001). It means that, the government secondary school students have significant lesser academic achievement scores as compared to aided secondary school students.
• A significant difference between government and private secondary school students with respect to academic achievement scores ($p=0.0001$). It means that, the government secondary school students have significant lesser academic achievement scores as compared to private secondary school students.

• A significant difference between aided and private secondary school students with respect to academic achievement scores ($p=0.0001$). It means that, the private secondary school students have significant lesser academic achievement scores as compared to aided secondary school students. The mean and SD scores are presented in the following figure.

Figure: Comparisons of government, aided and private secondary school students with respect to academic achievement scores

- A significant difference between urban and rural secondary school students with respect to academic achievement scores
- A significant difference between urban and rural secondary school students with respect to social ability scores
- A significant difference between urban and rural secondary school students with respect to emotional ability scores
- A significant difference between urban and rural secondary school students with respect to cognitive ability scores
A significant difference between government, aided and private secondary school students with respect to academic achievement scores.

**Statistical Techniques Used**

1. In pursuance of the objectives-1, the independent t and one way ANOVA tests followed by Tukeys multiple posthoc procedures were used find the different characteristics with respect to academic achievement, emotional ability, cognitive ability of secondary school students.

2. In pursuance of the objectives-2, the two-way Analysis of Variance with interactions designs tests with followed by Tukeys multiple posthoc procedures were used find the significant difference interaction effects of different demographic characteristics and emotional ability, cognitive ability on academic achievement of secondary school students.

3. In pursuance of the objectives-3, the Karl Pearson's correlation coefficient technique has been applied to find out the relationships of emotional ability, cognitive ability with academic achievement of secondary school students.

4. In pursuance of the objectives-4, the multiple linear regression analysis was applied to find out the combined influence of emotional development, cognitive development on academic achievement of secondary school students.

5. In pursuance of the objectives-5, the path analysis was applied to find out the direct and indirect effects of emotional development, cognitive development on academic achievement of secondary school students.

**Conclusion**

The emotional ability and cognitive ability have directly positive and significant effect on academic achievement of secondary school students.
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