A Study of Curiosity among School Children in Relation to Intelligence and Scholastic Achievement

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Abstract. Children, by nature, are active, restless and have an urge to touch, feel, experience and understand everything. Anything that is new to them or that bas motion attracts their attention. Their inquisitiveness seems to be insatiable. Investigations in human curiosity are relatively new. In view of the paucity of researches in this area, the present investigation distinguishes itself by taking a large sample with gender as well as rural-urban differences taken into consideration. It finds out correlations between curiosity, intelligence, and scholastic achievement and also differentiates between the high and low curiosity children in respect of intelligence and scholastic achievement. The study arrives at interesting findings, important for educational practitioners at the school level.

Introduction

CURIOSITY has been recognised as an important human characteristic or trait which has contributed a great deal to the world’s progress. It has been found to be a significant factor in the learning process and in the development of creativity and problem solving aspects of the human mind. There is, therefore, a need to focus on developing this valuable attribute. All efforts to study and stimulate curiosity should preferably be concentrated on school-age children as they are in the process of speedy mental growth and only of late, have been studied by a few researchers. Keeping this fact in mind and owing to the dearth of studies in India in this area, the present study was planned.

Curiosity refers to a tendency to wonder to inquire, to investigate, and to seek in-formation about anything novel or unknown. It is frequently expressed in exploratory and manipulative activities. In the present study, the following operational definition of curiosity was adopted which was developed by Maw and Maw (1964) after examining all the in-formation collected by them through formal and informal inquiries, review of dictionary definitions and a survey of ancient and modern literature in the field.

An elementary school child is said to demonstrate curiosity when he (1) reacts positively to new, strange, incongruous, or mysterious elements in his environment by moving towards them, by exploring them, or by manipulating them; (2) exhibits a need or by a desire to know more about himself and/or his environment; (3) scans his surroundings seeking new experiences; and/or (4) persists in examining and/or exploring stimuli in order to know more about them.

A review of related research literature reveals that investigations into human curiosity are relatively new when compared to the study of curiosity behavior in sub-human species. Earlier researches on curiosity in with the quantity and quality of children's questions. Recent researches on children's curiosity have, however, focused on other aspects of curiosity as well. Curiosity has also been studied in relation to certain demographic, cognitive, personality, social intelligence, and other variables. Variables like age, sex, 5000-economic status, intelligence, creativity, academic competence, problem solving, anxiety, security, need-achievement, self concepts, extraversion-neuroticism, adjust- e, social attitudes, social responsibility, etc. have been studied by the researchers as cor- dates of curiosity and some of them also as discriminators between the high and low curiosity groups (Berlyne, 1957; Mc Reynolds and associates, 1961; Maw & Maw, 1964, 1965, 1570, 1970b; Maw
and Magoon, 1971; Minuchin, 1971; Vidlar and Karan, 1975; Kak-ar, 1977; Kauser, 1982; Dash and associates, 1985, Hany and Beall, 1985; Nandi, 1988). The present investigation carries distinction over the previous ones in that it has been conducted on a large sample and takes sex as well as rural-urban differences into consideration. It finds out the correlation between curiosity, intelligence and scholastic achievement as well as differentiates between the high and low curiosity children, in respect of intelligence and scholastic achievement. The findings of the study are interesting and important for educational practice at the school level.

Objectives

The main objectives of the study were

1. To find out the relationship between curiosity and intelligence.
2. To find out the relationship between curiosity and scholastic achievement.
3. School children were primarily concerned 3. To find out sex-differences in respect of curiosity.
4. To find out rural-urban differences in respect of curiosity.
5. To find out whether the high and low curiosity pupils differ in respect of their
6. To find out whether the high and low curiosity pupils differ in respect of their scholastic achievement.

Hypotheses

The following hypotheses were formulated and tested in the study

1. There is a significant positive relationship between curiosity and intelligence.
2. There is a significant positive relation- ship between curiosity and scholastic achievement.
3. There are significant sex-differences in respect of curiosity.
4. There are significant rural-urban differences in respect of curiosity.
5. The high and low curiosity pupils differ significantly in respect of intelligence.
6. The high and low curiosity pupils differ significantly in respect of scholastic achievement.

Sample

The sample of the study consisted of 1024 pupils (572 boys and 452 girls) of Class VII studying in 14 randomly selected secondary schools of Vadodara district, Gujarat. The pupils belonging to rural and urban backgrounds were 182 and 842 respectively. The rural or urban background of the pupils was determined on the basis of their place of living.

Tools

The following tools were used for the study.

1. Children's Curiosity Scale (in Hindi) constructed and standardised by the investigator on the lines of Maw & Maw's Self-rating Instrument of Curiosity.
2. General Intelligence Test (in Hindi) constructed and standardized by Dr R.K. Tandon.
3. School examination marks in five subjects, namely, Hindi, English, Mathematics, Social Studies and General Science were considered as scholastic achievement and were obtained from the schools’ records.

Results, Discussion and Conclusions

The collected data were organised, classified and analysed statistically. Statistical techniques like mean, median, standard deviation, t-test, product-moment correlation, etc. were employed to analyse the data. The high and low curiosity groups of children were formed on the basis of M± 1 SD for the
distribution of curiosity scores.

With a view to test the first hypothesis of the study, the coefficient of correlation (r) between curiosity and intelligence was computed for the total group and its significance (tr) was found out. The results are presented in Table 1.

Table 1 indicates that the value of ‘r’ (0.21) between curiosity and intelligence was found to be low but significant at 0.01 level. The present finding is supported by the previous finding of Kakkar (1977) Thus, the first hypothesis was accepted and it has been concluded that there exists a significant positive relationship between curiosity and intelligence.

To test the second hypothesis of the study, the coefficient of correlation between curiosity and scholastic achievement was computed. The results are shown in Table 2.

Table 2 indicates that the coefficient of correlation (0.27) between curiosity and scholastic achievement was found to be significant at 0.01 levels. This finding is in accordance with the finding of Kakkar (1977). The second hypothesis was accepted here and it has been concluded that there exists a significant positive relationship between curiosity and scholastic achievement.

Table -1 Coefficient of correlation between Curiosity and Intelligence

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>r</th>
<th>tr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1024</td>
<td>0.21</td>
<td>6.86*</td>
</tr>
</tbody>
</table>

*Significant at 0.01 level.

Table -2 Coefficient of correlation between Curiosity and Scholastic Achievement

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>r</th>
<th>tr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1024</td>
<td>0.27</td>
<td>8.96*</td>
</tr>
</tbody>
</table>

*Significant at 0.01 level.

The third hypothesis was tested by finding out sex-differences regarding curiosity. The results are presented in Table 3.

It is evident from Table 3 that the mean score of the boys on curiosity was found to be significantly higher than the mean score of the girls at 0.01 levels. This finding is in tune with the previous findings of Smith (1957), Maw & Magoon (1971), Kauser (1982) and Nandi (1988). Here the third hypothesis has been accepted and may be concluded that boys have significantly higher curiosity than girls. Smith (1957) pointed out that girls tended to be less curious than boys because of greater parental restrictions on their explorations. This may be the cause for the girls showing lesser curiosity than the boys in the present study. The fourth hypothesis of the study was tested by finding out rural-urban differences regarding curiosity.

Table 4 indicates that the mean score of the urban pupils on curiosity was not found to be significantly higher than the mean score of the rural pupils at 0.05 levels. Hence, the fourth hypothesis was rejected and it may be concluded that curiosity is not rural-urban biased.

To test the fifth hypothesis of the study, the high and low curiosity groups of children were compared by finding out the significance of the difference between the means of scores obtained on intelligence test by the two groups. Results are shown in Table 5.

It is indicated from Table 5 that the difference between the means of scores obtained on intelligence by the high and low curiosity pupils is significant at 0.01 level with the high curiosity children having significantly greater mean score. This finding is in accordance with the finding of Maw & Magoon (1971). Here the fifth hypothesis has been accepted and it has been concluded that the high curiosity pupils also have significantly higher intelligence than the low curiosity pupils. It confirms the notion that curiosity is a sign of a vigorous intellect.
Table -3 Means, SDs and t value of Curiosity Scores of Boys and Girls

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>572</td>
<td>101.32</td>
<td>14.10</td>
<td>3.03</td>
</tr>
<tr>
<td>Girls</td>
<td>452</td>
<td>98.47</td>
<td>15.94</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.01 level.

Table -4 Means, SDs and t-value of scores on Curiosity of Groups Based on Rural and Urban Backgrounds

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>182</td>
<td>98.46</td>
<td>12.81</td>
<td>1.59</td>
</tr>
<tr>
<td>Urban</td>
<td>842</td>
<td>100.40</td>
<td>15.36</td>
<td></td>
</tr>
</tbody>
</table>

Table -5 Means, SDs and t-value of scores on Intelligence of the High and Low Curiosity Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Curiosity</td>
<td>149</td>
<td>122.29</td>
<td>17.72</td>
<td>5.81*</td>
</tr>
<tr>
<td>Low Curiosity</td>
<td>202</td>
<td>111.88</td>
<td>15.70</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.01 level

To test the sixth hypothesis of the study, the significance of the difference between the means of scores obtained on scholastic achievement by the high and low curiosity groups was also found. Table 6 indicates the results.

It is evident from Table 6 that the difference between the means of scores obtained on scholastic achievement by the high and low curiosity pupils is also significant at 0.01 level with the high curiosity pupils showing significantly higher scholastic achievement. The present finding is in tune with the finding of Dash and associates (1985). Here the sixth hypothesis was accepted and it has been concluded that the high and low curiosity pupils differ significantly in respect of their scholastic achievement with the high curiosity pupils having significantly higher scholastic achievement.

**Educational Implications**

The findings of the present investigation may be utilised for creating a proper teaching- learning environment in the classrooms. The knowledge of these findings may be helpful for teachers and administrators in understanding the low curiosity pupils and in stimulating their curiosity. By encouraging them to ask questions and by giving satisfactory answers to their questions, teachers can stimulate their curiosity and also help to build confidence in them. This may ultimately improve their scholastic achievement.

Table -6 Means, SDs and t-value of scores on Intelligence of the High and Low Curiosity Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Curiosity</td>
<td>149</td>
<td>106.85</td>
<td>21.49</td>
<td>6.66*</td>
</tr>
<tr>
<td>Low Curiosity</td>
<td>202</td>
<td>93.16</td>
<td>17.00</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.01 level

**REFERENCES**


