



## INFLUENCE OF TYPES OF SCHOOLS AND EFFORTFUL CONTROL ON PROBLEM SOLVING ABILITY OF SCHOOL STUDENTS

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### Abstract

*One of the indicators of intelligent behavior is the ability to solve problem. A student is expected to have adequate problem solving ability that will help them in solving academic and non-academic problems. Therefore, various efforts need to be done to improve problem solving ability in students. The present study was an effort to study the influence of types of institutions and effortful control on problem solving ability of secondary school students. It was a survey work. The sample was selected from VIII<sup>th</sup>, IX<sup>th</sup> and X<sup>th</sup> class students of government and private schools of Jalandhar and Kapurthala districts by using cluster random sampling technique. Tools used for data collection were Problem Solving Ability Test by Kaufman (1954) and King (1991), and Effortful Control Scale by Lonigan & Phillips (2001). The collected data were analysed and the results were interpreted.*



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A problem can be defined as a block or obstacle that one cannot overcome with exiting habits and practices. Woolfolk (2004) pointed out that problem is any situation in which you are trying to reach some goal and must find a means to do so. In day-to-day life we face many problems with no readymade solution. The aim of our schools is to make our students efficient in solving problems. National Curriculum Framework (2005) emphasised that the development of life skills such as critical thinking skills, interpersonal communication skills, negotiation/refusal skills, decision making/ problem-solving skills, and coping and self-management skills is very critical for dealing with the demands and challenges of everyday life. Kennedy (1980) argued that problem solving is related to individuals' previous knowledge and experiences. So, learning problem solving skills in the schools can be beneficial in solving problems. However, government and private schools in India differ with respect to many factors like socio-economic background of students, qualification of teachers, salary structure of teacher, and medium of learning. Thus, the type of schools can have different influence on the problem solving ability of the students. It may be beneficial to study the influence of types of schools on the problem solving ability of the students. Moreover, the study also focused on investigating the relationship between effortful control and problem solving ability of student. As effortful control include attentional control processes, the inhibition of prepotent behaviors in response to instructions or social

demands, and the capacity to perform an action when there is a strong tendency to avoid it (Rueda, 2015), studying problem solving ability in relation to effortful control of the students can be useful. Thus, it was thought to study the influence of types of schools and effortful control on problem solving ability of secondary school students

### **Objective**

To study the influence of Type of School, Effortful Control and their interaction on Problem Solving Ability of Secondary School Students

### **Methodology**

#### **Sample**

Cluster Random sampling technique was used to select the sample. The sample comprised 244 students. Out of which, 125 were from government schools and 119 were from private schools. Also, class-wise 60 students were from class VIII, 125 students were from class IX, and 59 students were from class X.

#### **Tools**

- For assessing the problem solving of secondary school students, the Problem Solving Test consisting of 10 problems were used. Out of these 10 problems, two problems were taken from Kaufman (1954) and eight were taken from paper and pencil test of problem solving ability developed by King (1991). For each correct answer two marks were given.
- For assessing effortful control of students, Punjabi translation of Effortful Control Scale (ECS) developed by Lonigan and Phillips (2001) was used. The ECS is a 24-item self-report questionnaire with a 5-point rating scale, tapping Persistence/Low Distractibility and Impulsivity (12 items each). The sum of score is the total effortful control score. Verstracten, Vasey, Class, and Bijttebier (2009) supported the construct validity of ECS and found it more appropriate for use in broader age ranges.

#### **Procedure**

Students selected in sample were made to sit comfortably in their classrooms of the schools they belonged to. The Problem Solving Test and Effortful Control Scale were administered on the students. After the completion of the test the investigator collected the test booklets. The scoring was done as per the instructions given in the manuals.

## Result and Interpretation

The objective was to study the influence of Type of School, Effortful Control and their Interaction on Problem Solving Ability of Secondary School Students. There were two types of schools (Government and Private) and there were three levels of effortful control (Low, Intermediate and High). So, data were analysed with the help of  $2 \times 3$  Analysis of variance. The results are given in table 1.

**Table 2 Summary of  $2 \times 3$  factorial design for problem solving ability**

| Source of Variance   | Sum of Squares | Degree of Freedom | Mean Sum of Squares | F-value |
|----------------------|----------------|-------------------|---------------------|---------|
| Types of School(A)   | 29.38          | 1                 | 29.38               | 7.60**  |
| Effortful Control(B) | 28.49          | 2                 | 14.25               | 3.69*   |
| A×B                  | 3.75           | 2                 | 1.88                | .49     |
| Error                | 920.19         | 238               | 3.86                |         |

significant at 0.01 level

significant at 0.05 level

- As per the table 1, F-value for types of schools is 7.60, which is significant at .01 level. It indicates that mean score of students belonging to Government and Private schools differ significantly. In this context, the null Hypothesis, namely, “There is no significant influence of Types of Schools on Problem Solving Ability of secondary school students” is rejected. Further, the mean score of problem solving ability of private school students (5.09) was significantly higher than those of government school students (4.47). It may therefore be said that the problem solving ability of private school students was found to be better than government school students.
- F-value for effortful control is 3.69, which is significant at .05 level. It indicates that mean scores of students belonging to low, intermediate and high effortful control groups differ significantly. In this context, null hypothesis, namely, “There is no significant influence of Effortful Control on Problem Solving Ability of secondary school students”, is rejected. In order to probe further the Scheffe’s PostHoc analysis was done. The results are given in Contrast Coefficient table 2.

**Table 2: Multiple comparisons and mean differences in problem solving ability by effortful control**

| Comparison       | Mean Difference   | SE  | Scheffe 95%CI |
|------------------|-------------------|-----|---------------|
| Low vs. Average  | -.73 <sup>*</sup> | .30 | -1.48, .01    |
| Average Vs. High | .02               | .31 | -.74, .78     |
| Low Vs. high     | -.71              | .34 | -1.54, .12    |

\* significant at 0.05 level

The Contrast Tests Table helps us to identify which main effects were statically significant. Scheffe’s PostHoc analysis revealed that students with average effortful control had significantly higher problem solving ability than students who had lower effortful control. Influences at the other levels of effortful control were not significant.

- As per table 1, F-value for interaction between type of school and effortful control is .49, which is not significant. It indicates that there was no significant influence of the resultant of the interaction between types of schools and effortful control on problem solving ability. In this context the null hypothesis, namely, “There is no significant influence of Interaction between Type of School and Effortful Control on Problem Solving Ability of secondary school students”, is not rejected. It may, therefore be said that problem solving ability was found to be independent of the interaction between type of school and effortful control.

**Discussion**

It was found that problem solving ability of students of private school was better as compared to government school students. The private school students may have better environment for problem solving in their school as compared to government school students. The parents of private school students are more influential and better aware of importance of education than that of the parents of government school students. The reasoning ability, mental ability and grasping power of the private school students may be better than government school students. These aspects are normally related with problem solving ability. It may be the reason of present finding. Also it was found that students with average effortful control were better on Problem Solving Test as compared to students with low effortful

control. Thus, teachers need to develop some strategies for helping students with low effortful control to improve their effortful control.

## References

- ASLAN, E. A. (2002). *Yaratıcı problem çözme. İçn. Örgütte kisisel gelişim [Creative problem solving. In personal development at organization]* Esra A. Aslan (Ed.) Ankara: Nobel Yayınları.
- Kaufman, G.L. (1954). *The book of modern puzzles (2<sup>nd</sup> Ed.)*. New York: Dover Publication, Inc.
- Kennedy, L. M. V. (1980). *Educational psychology: In theory and practice*. New York: Random House
- King, A. (1991). *Effects of training in strategic questioning on children's problem-solving performance*. *Journal of Educational Psychology*, 83(3), 307-317
- Lonigan, C.J., & Phillips, B.M. (2001). *Temperamental influences on the development of anxiety disorders*. In M.W. Vasey & M.R. Dadds (Eds.), *The development psychopathology of anxiety (pp.60-91)*. New York: Oxford University Company.
- National Council of Teachers of Mathematics (NCTM). (2000). *Principles and standards for school mathematics*. Reston, VA.
- National Curriculum Framework. (2005). *National curriculum framework*. New Delhi: National Council of Educational Research and Training.
- Verstraten, K., Vasey, M.W., Claes, L., & Bijttebier, P. (2009). *The assessment of effortful control in childhood: Questionnaires and the Test of Everyday Attention for children compared*. *Personality and Individual Differences*, 48, 59-65. doi: 10.1016/j.paid.2009.08.016.
- Woolfolk, A. (2004). *Educational psychology (9<sup>th</sup> Ed.)*. Delhi: Pearson Education, Inc.