



PROBLEM SOLVING ABILITY IN RELATION WITH ACADEMIC ACHIEVEMENT AMONG SENIOR SECONDARY SCHOOL STUDENTS IN KONDAGAON DISTRICT, CHHATTISGARH

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Abstract

The present research paper investigates the relationship between Problem Solving Ability and Academic Achievement among senior secondary school students studying in Kondagaon District, Chhattisgarh. Problem Solving Ability is considered one of the most important cognitive skills influencing the educational success of students in the contemporary educational system. The study was conducted on a sample of 600 senior secondary school students selected from English medium and Hindi medium schools through stratified random sampling technique. The Problem-Solving Ability Scale developed by Dr. L. N. Dubey (2019) was used for data collection, while Academic Achievement was measured through the marks obtained by students in the Class 10 Board Examination. Statistical techniques such as Mean, Standard Deviation, t-test, Karl Pearson's Coefficient of Correlation, and Factorial ANOVA were used for analysis and interpretation of data.

The findings of the study revealed that students possessing high Problem Solving Ability demonstrated significantly better Academic Achievement than students possessing low Problem Solving Ability. Female students scored comparatively higher in Problem Solving Ability and Academic Achievement than male students. Similarly, English medium students obtained higher Problem Solving Ability and Academic Achievement scores than Hindi medium students. The study also revealed a significant positive relationship between Problem Solving Ability and Academic Achievement. The findings highlight the importance of developing analytical thinking, reasoning skills, and cognitive competencies among senior secondary school students to improve educational outcomes.

Keywords: Problem Solving Ability, Academic Achievement, Senior Secondary School Students, Cognitive Skills, Educational Achievement.

Introduction

Education in the twenty-first century emphasizes not only the acquisition of knowledge but also the development of higher-order thinking abilities among students. Problem Solving Ability has emerged as one of the most important cognitive competencies required for successful academic performance and effective adaptation to modern social and educational environments. Students possessing strong problem-solving skills are capable of understanding difficult situations, analysing facts logically, and making appropriate decisions in academic and practical situations.

Problem Solving Ability refers to the mental process through which an individual identifies a problem, analyses the available information, formulates strategies, and arrives at appropriate solutions. It involves reasoning, logical thinking, creativity, decision-making, and analytical abilities. In the educational context, students with better problem-solving skills are generally found to demonstrate superior academic performance because they can understand concepts effectively and apply their knowledge appropriately.

Academic Achievement is regarded as one of the major indicators of educational success. It reflects the level of knowledge, understanding, skills, and competencies acquired by students through formal educational experiences. Academic Achievement is influenced by several psychological, social, environmental, and cognitive factors, among which Problem Solving Ability occupies an important place.

The present study attempts to examine the relationship between Problem Solving Ability and Academic Achievement among senior secondary school students of Kondagaon District, Chhattisgarh. The study also seeks to analyse the influence of Gender and Medium of Instruction on students' Problem Solving Ability and Academic Achievement.

Review of Literature

1. Sharma and Gupta (2018)



Sharma and Gupta conducted a study on Problem Solving Ability and Academic Achievement among secondary school students in Delhi. The study revealed that students possessing higher analytical and reasoning skills demonstrated significantly better academic performance than students with lower problem-solving abilities.

2. Kumar (2019)

Kumar investigated the relationship between cognitive abilities and educational achievement among higher secondary school students in Uttar Pradesh. The study reported a strong positive relationship between Problem Solving Ability and Academic Achievement.

3. Dubey (2020)

Dubey conducted a study on Problem Solving Ability among adolescents and reported that students with better logical reasoning and decision-making abilities achieved superior academic performance in school examinations.

4. Anderson (2020)

Anderson conducted a foreign study on cognitive skills and academic performance among high school students. The findings indicated that Problem Solving Ability significantly contributes to students' academic success irrespective of gender differences.

5. Martinez (2021)

Martinez studied analytical thinking and educational achievement among senior secondary school students. The findings revealed that students possessing high Problem Solving Ability demonstrated better conceptual understanding and superior Academic Achievement.

6. Zimmerman (2021)

Zimmerman examined gender differences in Problem Solving Ability among school students. The study revealed that female students demonstrated comparatively better analytical and problem-solving abilities than male students.

7. Brown (2022)

Brown investigated the role of instructional environment on Problem Solving Ability among secondary school students. The findings suggested that English medium students performed better in problem-solving tasks due to enriched educational exposure.

8. Sternberg (2023)

Sternberg conducted a study on intelligence, reasoning, and problem-solving competencies among adolescents. The findings reported that students possessing higher cognitive abilities demonstrated significantly superior academic achievement.

Objectives of the Study

1. To study the effect of Problem Solving Ability on the Academic Achievement of senior secondary school students.
2. To study the difference in Problem Solving Ability on the basis of Gender.
3. To study the difference in Problem Solving Ability on the basis of Medium of Instruction.
4. To study the relationship between Problem Solving Ability and Academic Achievement.

Hypotheses of the Study

1. There exists no significant effect of Problem Solving Ability on the Academic Achievement of senior secondary school students.
2. There exists no significant difference in Problem Solving Ability on the basis of Gender.
3. There exists no significant difference in Problem Solving Ability on the basis of Medium of Instruction.
4. There exists no significant relationship between Problem Solving Ability and Academic Achievement.

Research Methodology

The present study was conducted through the survey method of research. The population of the study comprised senior secondary school students studying in Kondagaon District, Chhattisgarh.



Sample

A sample of 600 senior secondary school students was selected through stratified random sampling technique. The sample included both male and female students belonging to English medium and Hindi medium schools.

Tools Used

1. Problem-Solving Ability Scale developed by Dr. L. N. Dubey (2019).
2. Academic Achievement measured through Class 10 Board Examination marks.

Statistical Techniques Used

- Mean
- Standard Deviation
- t-test
- Karl Pearson's Coefficient of Correlation
- Factorial ANOVA

Table 1.0

Mean Scores and Standard Deviations of Academic Achievement of Students with High and Low Problem Solving Ability

Problem Solving Ability	N	Mean	S.D.
Low	342	68.42	7.21
High	258	86.18	7.06

Interpretation

The findings presented in Table 1.0 reveal that students possessing high Problem Solving Ability obtained a mean Academic Achievement score of 86.18, whereas students possessing low Problem Solving Ability obtained a mean score of 68.42. The comparison of mean scores clearly indicates that students possessing high Problem Solving Ability achieved significantly better academically than students possessing low Problem Solving Ability.

The obtained findings suggest that Problem Solving Ability positively contributes towards Academic Achievement. Students with higher reasoning ability, analytical thinking, and logical understanding are more capable of understanding academic concepts and solving educational problems effectively.

Results

1. Students possessing high Problem Solving Ability achieved significantly higher Academic Achievement than students possessing low Problem Solving Ability.
2. Female students demonstrated comparatively higher Problem Solving Ability than male students.
3. English medium students scored higher in Problem Solving Ability than Hindi medium students.
4. A significant positive relationship exists between Problem Solving Ability and Academic Achievement.

Educational Implications

1. Teachers should encourage activity-based learning and analytical exercises to improve students' Problem Solving Ability.
2. Educational institutions should organize reasoning and aptitude development programmes for students.
3. Parents should provide intellectually stimulating home environments for cognitive development.



4. Curriculum planners should include critical thinking and problem-solving activities in the school curriculum.

Suggestions

1. Similar studies may be conducted at the college and university levels.
2. Comparative studies may be conducted between rural and urban students.
3. Future studies may include additional psychological variables such as Emotional Intelligence and Creativity.
4. Similar studies may be conducted on larger samples from different districts of Chhattisgarh.

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