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PROBLEM SOLVING ABILITY OF SECONDARY SCHOOL STUDENT OF BHOPAL DISTRICT IN MADHYAPRADESH

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Abstract:

Problem-Solving refers to the process of finding a solution to a problem or challenge. It involves identifying the problem, analyzing the situation, and generating potential solutions or strategies to resolve the issue. Problem-solving may involve critical thinking, creativity, and decision-making skills. Problem-solving is a crucial skill in many areas of life, including work, education, and personal relationships. By developing effective problem-solving skills, individuals can improve their ability to overcome challenges and achieve their goals. The study revealed that Out of 200 Secondary School Students, 62.19% of the students fell under Extremely Low Problem Solving Ability. 29.35% of Secondary School Students scored Low Problem Solving Ability, 6.97% of Secondary School Students were having Below Average Problem Solving Ability. Only 1.49% of Secondary School Students had an Average Problem Solving Ability.

Keywords: Problem Solving Ability, Secondary School Students, Educational Development, Gender



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Introduction

Problem-solving ability is the capacity to effectively identify, analyze, and solve problems. It is a valuable skill that is essential in many areas of life, including work, education, and personal relationships. Problem solving ability involves a combination of critical thinking, creativity, and decision-making skills, as well as the ability to gather and analyze relevant information and data. Individuals with strong problem-solving ability are typically able to identify problems quickly and accurately, and are able to generate a variety of potential solutions to solve them. They are also able to evaluate the pros and cons of each solution, and select the best option based on a variety of factors, such as feasibility, potential effectiveness, and resources required. Additionally, individuals with strong problem-solving ability are able to implement and monitor the chosen solution, adjusting it as necessary to ensure it is effective in resolving the problem. Problem-solving ability is a highly valued skill in many professions, such as engineering, science, business, healthcare, and law. It is also an important life skill that can help individuals overcome challenges, make informed decisions, and achieve their goals. Problem Solving Ability is the cognitive capability of the problem solver to perform physical or mental operations based upon his knowledge so as to achieve the goal of solving a problem. This is measured as the score of the Problem Solving Ability with three components namely, comprehending the Problem, Clarifying the Problem and Finding Solution to the Problem (Manoj, 2006). Problem Solving Ability is the prediction of achievement in the school environment. The Ability of Problem Solving has a fundamental role in students' academic performance and their construction of the concepts

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Statement of the Problem

The present study focused on the levels of Problem Solving Ability of Secondary Students of Bhopal District in Madhya Pradesh and to compare problem solving ability of secondary school students of Bhopal District with respect to gender.

Review of Related Literature

With regard to Level of Problem Solving Ability Ganandevan (2006) found out that the problem solving ability of secondary students is low. This finding is also supported by the finding of Nataraj and Manjula (2012) conducted a study on "A study of problem solving ability among the matriculation school students" and they have also found that the problem solving ability of matriculation students is low. But Kanmani and Nagarathinam (2017) investigated on "Problem solving ability and academic achievement of higher secondary students" and found 65.5 percentage of higher secondary students had an average level of problem solving ability. Praveen (2018) also found that students have average level of Problem solving ability. Whereas Dawngliani et al (2019) found the opposite that students of secondary school in Aizawl City were good in problem-solving ability. Kumar (2020) also found a high of problem-solving ability among the higher secondary students.

Regarding Problem Solving Ability in relation to Gender Nataraj and Manjula (2012) found that the male and female students and the students residing at rural and urban area differ significantly in their problem solving ability this finding is similar to the finding of Senthamarai et al (2016) and found that a significant difference in problem solving ability of IX standard students with respect to gender. Ahuja (2020) found the similar result and his study revealed that girl students had significantly higher problem-solving abilities. It means significant difference was found in respect to gender. Whereas those findings are in contradict to the findings of Dawngliani et al (2019) also found in no difference in the level of problem-solving ability between male and female students of government secondary schools of Aizawl City in respect to Gender. This means that neither male nor female students had a better problem solving ability.

Rationale of the Study

The research area of Bhopal is commonly believed to be economically and socially deprived, facing significant challenges in communication, transportation, and medical care. Due to the poor financial and educational backgrounds of most parents, many children are unable to access a decent education. Compared to other districts in M.P, the secondary school students in Bhopal jurisdiction are lacking in terms of quality, infrastructure, access, problem-solving, motivation, and technology. However, there is a possibility that many of these students possess hidden abilities, talents, and innate characteristics, making a thorough investigation necessary to uncover the truth about students in this region. Problem-solving ability is an essential factor in evaluating students' quality as it enables them to overcome real-life obstacles. Therefore, understanding students' problem-solving abilities is crucial for their success.

Studying the problem-solving ability of secondary school students in the Bhopal District in M.P. can have several significant implications:

Educational improvement: Identifying the strengths and weaknesses of students in problem-solving can help educators tailor their teaching methods to better meet the needs of the students. This can lead to better academic performance and overall educational improvement.

Career readiness: Problem-solving ability is an essential skill in many careers, particularly in fields such as engineering, science, business, and healthcare. Studying the problem-solving ability of secondary school students can help ensure they are prepared for their future careers. **Economic development:** The ability to solve problems is a valuable asset in the workforce. If students in the Bhopal District in Madhya Pradesh develop strong problem-solving abilities, they can contribute to the economic development of the region by being more effective in their careers.

Personal growth: The development of problem-solving ability can help students become more confident and self-reliant. This can lead to greater personal growth and a greater sense of empowerment.

Social development: Problem-solving skills can be useful in addressing social and community issues. Students with strong problem-solving abilities can contribute to the development of their communities by being more effective in identifying and addressing local challenges.

Overall, studying the problem-solving ability of secondary school students in the Bhopal District in M.P. can have a significant impact on their academic and career readiness, as well as on their personal and social development, and on the economic development of the region

Objectives of the Study

1. To find out the level of Problem Solving Ability of Secondary School Students of Bhopal District.
2. To compare the Problem Solving Ability of Male and Female Secondary School Students of Bhopal District.

Hypotheses of the Study



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1. There is no significant difference between Problem Solving Ability of Secondary School Students in relation to Gender.

Method of Study

The descriptive research method was used for this research. In education, the descriptive approach has been the most widely used research method. The approach necessitates the use of sample and a related research instrument for data collection and conducting the study.

Population and Sample

A population refers to any collection of human beings or non-human entities such as objects, educational institutions, time units, Geographical areas, prices of wheat or salaries drawn by individuals. Some statisticians call it universe. (Koul, 2009). The population of the present study consists of secondary school students of Bhopal district area. The representative portion of the population is called a sample. (Koul, 2009) The sample consists of 200 Secondary School Students were selected through random cluster sampling technique.

Tools of Data Collection

The investigator visited randomly selected Secondary Schools in the Bhopal areas. After obtaining permission from school authorities, the investigator first established rapport with the students and clarified the aim of the research, requesting them to engaged whole heartedly and honestly while answering to the test. The students were invited to take Problem Solving Ability Test of L.N. Dubey one after the other, and they were promised that their answers would be kept completely secret and utilized exclusively for research purposes. The total time required to complete all of the exams was roughly an hour.

Analysis and Interpretation of Data

Analysis and interpretation of the study was done in accordance with the objectives of the study as follows:

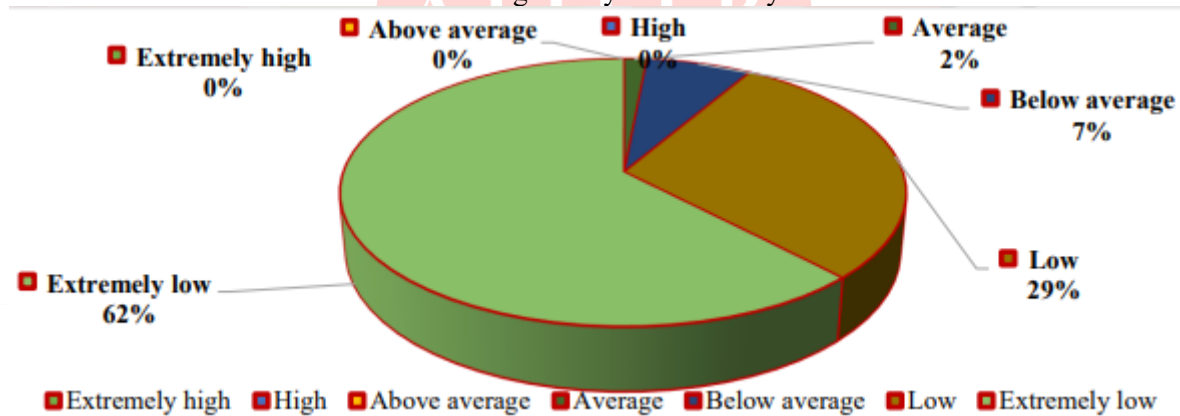
Objective No 1: To find out the level of Problem Solving Ability of Secondary School Students of Bhopal District . Level of Problem Solving Ability of Secondary School Students of Bhopal District is presented in Table No-1

Table 1

Category	No. of Students	Percentage	Male	Percentage	Female	Percentage
Extremely high	0	0	0	0	0	0
High	0	0	0	0	0	0
Above average	0	0	0	0	0	0
Average	3	1.49	3	2.65	0	0
Below average	14	6.97	5	4.42	9	10.25
Low	59	29.35	37	32.74	22	25
Extremely low	124	62.19	67	60.18	57	64.77
Total	200	100	112	100	88	100

Figure 1

Overall of Problem Solving Ability of Secondary School Students.



At a cursory glance Data vide table 1 and Figure 1 showed that the overall Problem Solving Ability of Bhopal Secondary School Students. Out of 200 Secondary School Students, 124 (62.19%) students fell under Extremely Low Problem Solving Ability, 59 (29.35%) students had Low Problem Solving Ability, 14 (6.97%) students had Below Average Problem Solving Ability, and 3 (1.49%) students had Average Problem Solving Ability. None of the students fell under



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Above Average, High and Extremely High Problem Solving Ability. Among male Secondary School Students, 67 (60.18%) students had Extremely Low Problem solving Ability, 37 (32.74%) students had Low Problem Solving Ability, and 5 (4.42%) students had Below Average Problem Solving Ability, only 3 (2.65%) students had Average Problem Solving Ability. Among female Secondary School Students 57 (64.77%) students scored Extremely Low Problem Solving Ability, 22 (25%) students obtained Low Problem Solving Ability and 9 (10.23%) students had Below Average Problem Solving Ability and none of the female students scored Average Problem Solving Ability. Therefore neither male nor female students had Above Average, High and Extremely High Problem Solving Ability. It could be concluded that most of Secondary School Students fell under Extremely Low Problem solving Ability.

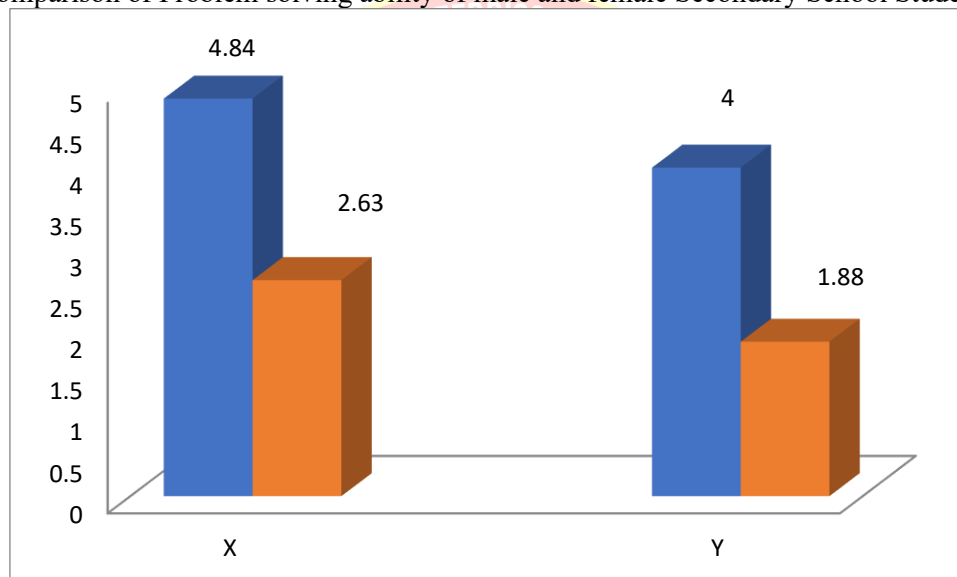
Objective No 2: To compare the Problem Solving Ability of Male and Female Secondary School Students of Bhopal District.

Problem Solving Ability of Male and Female Secondary School Students of Bhopal District is presented in Table No-2. Table No-2

Gender	N	Mean	SD	T-Value	Level of Significant
Male	112	4.84	2.63	2.64	Significant Level 0.05
Female	88	4.00	1.88		

Figure 2

Comparison of Problem solving ability of male and female Secondary School Students.



From table and figure 2, it could be observed that the mean scores and S.D. scores of Problem Solving Ability of male and female students were 4.84, 4 and 2.63, 1.88 respectively. The 't' value was 2.64, which was greater than the critical value at the required level of significance, and it indicates that a significant difference was found between male and female Secondary School Students in their Problem Solving Ability. Hence, the null hypothesis 'there is no significant difference between Problem Solving Ability of Secondary School Students in relation to gender' is rejected at a 0.05 level of confidence. Since the mean score of male (M=4.82) is higher than that of female (M=4), it could be concluded that the Problem Solving Ability of male is better than female.

Findings of the study

1. The present study revealed that no Secondary School Students fell under Above Average, High and Extremely High Problem Solving Ability. It could be concluded that majority of Secondary School Students fell under Extremely Low Problem solving Ability.

2. Significant difference was found between male and female Secondary School Students in their Problem Solving Ability. Since the mean score of male (M=4.82) was higher than that of female (M=4), it was concluded that the Problem Solving Ability of male is better than female.

Conclusion

Problem Solving is a skill which comprises logical inquiry of the facts and drawing conclusions in consistent with the data and evidences. Problem-solving is an individual phenomenon that requires the use of higher order cognitive abilities, as well as constant and persistent struggle on both conscious and unconscious levels in order to be successful.



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Some people can manage a situation, while others cannot. Problem solving is the process of determining solutions to problems through an ordered cognitive process. This is a process in which creative and critical thinking is used to solve or reason out difficulties presented by students in groups or individually. It is a mental process that provides effective problem-solving strategies for resolving and overcoming problems that appear to be impeding the accomplishment of a solution. A significant difference was found between problem solving ability of male and female students of Bhopal District it means that gender has affect problem solving ability among secondary students and it also indicates male has a better problem solving skills than female.

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