

Level of Problem Solving ability among Students of Master of Arts in Education from the Department of Education, Mizoram University

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Abstract:

This research article explores the levels of problem-solving ability among students pursuing a Master of Arts in Education at Mizoram University. The study assesses problem-solving skills in terms of gender and identifies the distribution of problem-solving abilities among the participants. Findings reveal that the majority of students show average problem-solving ability, with no significant differences detected based on gender or locale. The article underscores the importance of understanding and enhancing problem-solving skills in educational settings to optimize learning outcomes.

Keywords: Problem-solving ability, Master of Arts in Education, Gender comparison, Locale impact, Educational assessment

Introduction:

Problem-solving is a fundamental skill that plays a crucial role in the academic, professional, and personal development of individuals. It involves the ability to identify challenges, analyze possible solutions, and implement effective strategies to overcome obstacles. In the context of education, possessing strong problem-solving skills is essential for students to succeed in their studies, future careers, and everyday life. This research article aims to delve into the topic of problem-solving ability among students, examining the factors influencing this skill, strategies for enhancement, and the implications for educational practice.

The importance of problem-solving skills in the modern world cannot be overstated. With rapid advancements in technology, globalization, and the complex challenges facing society, students need to be equipped with the tools to tackle problems creatively and analytically. Research has shown a positive correlation between strong problem-solving abilities and academic achievement, career success, and overall well-being. Therefore, it is imperative for educators to foster this skill among students in educational settings. One of the key aspects of problem-solving ability is cognitive flexibility, which refers to the capacity to adapt thinking strategies based on the demands of different situations. Students with high levels of cognitive flexibility are more adept at approaching problems from multiple perspectives, exploring diverse solutions, and adjusting their strategies as needed. Developing cognitive flexibility requires practice, exposure to various problem-solving tasks, and critical thinking exercises that challenge students to think outside the box.

Another important factor influencing problem-solving skills is metacognition, which involves self-awareness of one's own thinking processes. Students who possess strong metacognitive abilities are better able to monitor their problem-solving strategies, evaluate the effectiveness of their approaches, and make adjustments to improve outcomes. By teaching students metacognitive strategies, educators can empower them to take control of their learning and become more independent problem solvers.

Moreover, the role of emotional intelligence in problem-solving cannot be ignored. Emotions play a significant role in decision-making and problem-solving processes, impacting individuals' perceptions, attitudes, and motivations. Students who are able to regulate their emotions, empathize with others, and maintain a positive mindset in the face of challenges are better equipped to approach problems with resilience and creativity. Educators can support the development of emotional intelligence by creating a supportive and inclusive learning environment that encourages risk-taking, collaboration, and reflection. In addition to individual factors, the learning environment also plays a crucial role in shaping students' problem-solving abilities. Classroom activities that promote inquiry-based learning, collaborative

problem-solving tasks, and real-world applications of knowledge can enhance students' problem-solving skills. Providing students with opportunities to work in teams, engage in hands-on projects, and receive constructive feedback from peers and teachers can foster a problem-solving mindset and a growth-oriented approach to challenges.

Rationale of the study:

The importance of studying the level of problem-solving ability among students pursuing a Master of Arts in Education from the Department of Education at Mizoram University cannot be overstated. This study holds significant implications for various stakeholders including the students themselves, educators, the academic institution, and the education system at large.

First and foremost, understanding the problem-solving abilities of students in this specific academic program is crucial for optimizing their learning experience and academic outcomes. As future educators, these students will play a pivotal role in shaping the next generation's learning experiences. Their ability to effectively solve problems, think critically, and adapt to diverse educational contexts will directly impact their effectiveness as educators. By assessing their problem-solving abilities, the academic program can tailor its curriculum, teaching methodologies, and support services to better prepare these students for the challenges they will encounter in their future careers.

Furthermore, this study holds relevance for the Department of Education at Mizoram University, allowing them to evaluate the effectiveness of their educational approach in fostering problem-solving skills among their students. The findings from this study can inform the department's instructional strategies, curriculum development, and student support initiatives. It can also serve as a basis for implementing targeted interventions to enhance the problem-solving abilities of students, thereby contributing to the overall quality of education imparted by the department. From a broader perspective, the study has implications for the education system in Mizoram and beyond. By gaining insights into the problem-solving abilities of students in a Master of Arts in Education program, policymakers and educational authorities can identify potential areas for improvement in the broader education system. This can lead to the development of policies and practices that prioritize the cultivation of problem-solving skills across all levels of education, ultimately benefiting students at large.

The results of this study can contribute to the existing body of knowledge on problem-solving abilities among students in the field of education. As research in this area grows, it can inform future studies, educational reforms, and pedagogical approaches. The findings may also have implications for the wider academic community, providing insights that can be applied to diverse educational contexts and disciplines.

Statement of the Problem:

“Level of Problem Solving ability among Students of Master of Arts in Education from the Department of Education, Mizoram University”

Research Objectives:

1. To find out the level of problem solving ability among students of Master of Arts in Education from the Department of Education, Mizoram University
2. To find out the level of problem-solving ability among the students of Master of Arts in Education from the Department of Education, Mizoram University in terms of gender.
3. To find out the level of problem-solving ability among the students of Master of Arts in Education from the Department of Education, Mizoram University in terms of Place of Origin (Locale).

Review of related Literature:

Several studies have examined the relationship between problem-solving ability and various factors among students across different educational levels. Ocak et al. (2021) found that the scientific attitudes of female students with high problem-solving skills were low, while Kumar (2020) reported high levels of problem-solving ability among higher secondary students. Furthermore, Surucu (2015) observed significant differences in problem-solving skills between university students, and Venkatarathanam (2021) highlighted the importance of problem-solving ability in relation to academic achievement among secondary school students. Praveen and Smitha (2018) noted an average level of problem-solving ability among secondary-level students, whereas Siti Khabibah et al. (2018) found poor problem-solving ability among postgraduate mathematics students. İncebacak and Ersoy (2016) identified challenges faced by secondary school students in solving complex problems, and Madhu Gupta et al. (2015) demonstrated the influence of problem-solving ability on academic achievement among high school students. Additionally, research by Pandey (2009) highlighted the performance differences between children in non-formal education centers and formal primary schools, while Bhuyan (2009) emphasized the effects of intelligence and problem-solving ability on the examination performance of higher secondary science students. Salami (2004) found a significant relationship between problem-

solving ability and career maturity among secondary school students, and Jacobson and Rotter (1978) illustrated the facilitating effect of social desirability on problem-solving. These studies collectively underscore the multifaceted nature of problem-solving ability and its impact on academic performance, scientific attitudes, and career readiness among students.

Method of study:

Qualitative approach alliance with quantitative approach is used in this research. It is conducted by using a Survey Method and is descriptive in nature.

Population and Sample:

There are 80 students presently studying Master of Arts in Education from the Department of Education, Mizoram University. As the total population of this study was not excessively big, Census sampling techniques was employed.

Tools and Method of Data Collection

The investigator used a ready-made tool for Problem Solving Ability Test (PSAT) prepared by Ishfaq Ahmad Bhat and Dr. G Arumugam and published by Psycho Matrix, Delhi. It contained 36 items to be completed in 45 minutes.

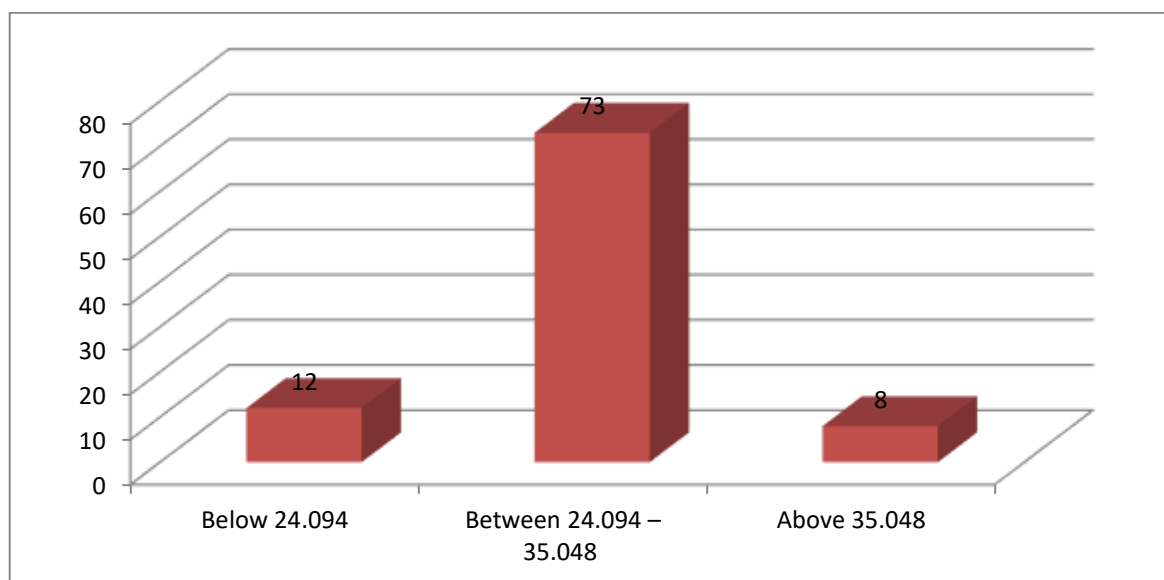
Analysis and Interpretations

1. To find out the level of problem solving ability among students of Master of Arts in Education from the Department of Education, Mizoram University

Descript			
	N	Mean	Std. Deviation
PSAT	80	29.58	5.486
Valid N (listwise)	80		

The subjects whose score was in between $M-1$ and $M+1$ were classified as an average ability where M = Mean and 1 = SD. So, the norms were made to interpret their levels of ability into three levels based on scores as per below:

- Below 24.094 = Low Ability = 12 (15%)
- Between 24.094 – 35.048 = Average Ability = 73 (73%)
- Above 35.048 = High Ability = 8 (10%)



2. To find out the level of problem-solving ability among the students of Master of Arts in Education from the Department of Education, Mizoram University in terms of gender.

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
PSAT	Male	41	29.39	5.291	.826
	Female	38	29.89	5.769	.936

Independent Samples Test										
Levene's Test for Equality of Variances				t-test for Equality of Means						
Problem Solving Ability Test						Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df				Lower	Upper
	EVA	0.167	0.684	-0.405	77	0.686	-0.504	1.244	-2.982	1.973
	EVNA			-0.404	75.007	0.687	-0.504	1.248	-2.992	1.983

Based on the statistics provided:**Group Statistics:**

For PSAT scores, there were 41 male participants with a mean score of 29.39 and a standard deviation of 5.291. For female participants, there were 38 with a mean score of 29.89 and a standard deviation of 5.769.

Independent Samples Test:

Levene's Test for Equality of Variances: The Levene's test checks the assumption of equal variances for the two groups. In this case, the test statistic is 0.167 with a p-value of 0.684, suggesting that the assumption of equal variances is met as the p-value is non-significant.

T-test for Equality of Means:

Assuming equal variances, the t-test statistic is -0.405 with 77 degrees of freedom and a p-value of 0.686. This implies that there is no significant difference between the mean PSAT scores of males and females when assuming equal variances.

When not assuming equal variances, the t-test statistic is -0.404 with approximately 75.007 degrees of freedom and a p-value of 0.687. Again, this indicates no significant difference in mean PSAT scores between males and females when not assuming equal variances.

Interpretation:

The analysis indicates that there is no significant difference between the mean PSAT scores of male and female participants, both when assuming and not assuming equal variances between the groups. This suggests that, based on the given data, gender does not have a significant impact on PSAT scores among the participants in this study.

3. To find out the level of problem-solving ability among the students of Master of Arts in Education from the Department of Education, Mizoram University in terms of Place of Origin (Locale).

Group Statistics					
	Locale	N	Mean	Std. Deviation	Std. Error Mean
PSAT	Urban	40	29.23	5.352	.846
	Rural	40	29.93	5.663	.895

Independent Samples Test										
Levene's Test for Equality of Variances				t-test for Equality of Means						
Problem Solving Ability Test									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper

	EVA	0.471	0.495	-0.568	78	0.572	-0.7	1.232	-3.153	1.753
	EVN A			-0.568	77.752	0.572	-0.7	1.232	-3.153	1.753

Group Statistics:

For the PSAT scores, there were 40 participants from urban areas with a mean score of 29.23 and a standard deviation of 5.352. Additionally, there were 40 participants from rural areas with a mean score of 29.93 and a standard deviation of 5.663.

Independent Samples Test:

Levene's Test for Equality of Variances: The Levene's test assesses the assumption of equal variances between the urban and rural groups. The test statistic is 0.471 with a p-value of 0.495, indicating that the assumption of equal variances is met as the p-value is not significant.

T-test for Equality of Means:

Assuming equal variances, the t-test statistic is -0.568 with 78 degrees of freedom and a p-value of 0.572. This suggests that there is no statistically significant difference in mean PSAT scores between urban and rural participants when assuming equal variances. When not assuming equal variances, the t-test statistic is also -0.568 with approximately 77.752 degrees of freedom and a p-value of 0.572. This indicates the same result - no significant difference in mean PSAT scores between urban and rural participants when not assuming equal variances.

Interpretation:

Based on the analysis, there is no significant difference in the mean PSAT scores between participants from urban and rural areas, both when assuming and not assuming equal variances. Therefore, the data does not provide evidence to suggest that the locale (urban or rural) significantly influences the PSAT scores of the participants in this study.

Conclusion:

Based on the data analysis and interpretation provided:

- Problem Solving Ability Levels among Master of Arts in Education Students: The majority of students (73%) demonstrated an average level of problem-solving ability, with 15% categorized as having low ability and 10% as having high ability. This suggests that the overall problem-solving ability among the students is moderately distributed, with most falling into the average category.
- Gender Comparison and Problem Solving Ability: There was no significant difference in the mean PSAT scores between male and female participants, regardless of assuming or not assuming equal variances. This indicates that gender does not play a significant role in influencing problem-solving ability among the students in this study.
- Locale Comparison and Problem Solving Ability: Similarly, there was no statistically significant difference in the mean PSAT scores between students from urban and rural areas, both when assuming and not assuming equal variances. This suggests that the place of origin (locale) does not have a significant impact on the problem-solving ability of the participants in this study.

The data analysis indicates that problem-solving ability levels among Master of Arts in Education students at Mizoram University are varied but predominantly average. Additionally, neither gender nor locale appears to significantly influence the students' problem-solving abilities based on the provided statistical analyses. Further research may be needed to explore other factors that could potentially impact problem-solving ability among this student population in greater detail.

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