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Decision-Making and Problem-Solving as Core Life Skills: A Cross-Sectional Study among Students with and without Disabilities at the Higher Education Level

Dr. Abhijit Biswas[1], Ranjit Barman[2]

[1]Assistant Teacher, Nayabad High School, South 24 Parganas, West Bengal, Kolkata-700150, India

[2]Ph.D Research Scholar, Department of Education, Jadavpur University, Kolkata- 700032, India

Abstract: ***The present study aimed to examine decision-making and problem-solving skills as core life skills among higher education students with and without disabilities in West Bengal. A cross-sectional survey design was adopted, and a total of 207 students (100 with disabilities and 107 without disabilities) were selected through purposive sampling. Data were collected using selected items from the Life Skills Scale developed by M. N. Vranda (2009). The findings revealed that higher education students possess a high level of decision-making and problem-solving skills. A significant positive correlation ($r = 0.649$, $p < 0.01$) was found between decision-making and problem-solving skills. No significant difference was observed in decision-making skills between students with and without disabilities; however, a significant difference was found in problem-solving skills, with students with disabilities scoring higher. Gender differences were significant in decision-making but not in problem-solving skills, while no significant differences were found based on the number of siblings. Significant differences were observed based on types of disability in both skills. The study highlights the importance of inclusive educational practices and support systems in enhancing essential life skills among students. The findings may help educators and policymakers design effective strategies to promote cognitive skill development among diverse learners in higher education.***

Keywords: Decision-Making Skills, Problem-Solving Skills, Life Skills, Higher Education, Students with Disabilities

1. Introduction

Life skills are fundamental qualities that allow people to properly deal with the demands and obstacles of everyday life. These skills help individuals make informed decisions, communicate effectively, and manage interpersonal relationships. According to the World Health Organization (1999), life skills are "abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life." Educational institutions play a significant role in fostering these skills among students to support their academic success and personal development.

Among the various life skills identified by the World Health Organization, decision-making and problem-solving are considered fundamental competencies for students in higher education. Decision-making refers to the cognitive process of selecting the most appropriate course of action from several alternatives, while problem-solving involves identifying challenges and applying strategies to find effective solutions. These skills help students face academic, social, and career-related situations with confidence and rational thinking.

Researchers have emphasized the importance of these cognitive life skills in educational development. According to Albert Bandura (1986), individuals develop behavioral and cognitive competencies through learning experiences and social interactions, which influence their ability to analyze situations and make effective decisions. Similarly, Daniel Goleman (1995) highlighted that cognitive and emotional competencies, including decision-making and problem-solving, are essential for successful personal and professional functioning.

In the context of higher education, students are expected to develop independence, critical thinking, and the ability to handle complex situations. However, students with disabilities often encounter additional challenges that may influence the development of these life skills. These challenges may include physical barriers, communication difficulties, social stigma, and limited access to resources, and fewer opportunities for active participation in academic and social activities. Such barriers may affect their confidence, autonomy, and opportunities to practice decision-making and problem-solving skills in everyday academic situations.

At the same time, inclusive education policies and supportive learning environments can enhance the development of life skills among students with disabilities. When appropriate academic support, assistive technologies, and inclusive practices are provided, students with disabilities can effectively develop essential cognitive and social competencies similar to their peers. Therefore, examining the level of decision-making and problem-solving skills among students with and without disabilities becomes important for understanding the effectiveness of inclusive educational practices.

2. Review of Literature

Decision-making and problem-solving skills are considered essential components of higher-order thinking and play a significant role in academic achievement and real-life success. According to Tawfik and Gatewood (2020), decision-making is closely related to problem-solving processes, and educational approaches such as inquiry-based and problem-based learning help students develop analytical thinking and effective decision-making abilities. Similarly, Sailer et al. (2021) reported that higher education experiences significantly influence students' development of critical thinking, problem-solving, and decision-making competencies.

Research has also highlighted the importance of these skills for students with disabilities in higher education. Gull, Kaur, and Basha (2025) found that students with disabilities often face barriers such as limited accessibility, inadequate academic support, and social exclusion, which may affect their learning outcomes and cognitive skill development. Fuchs and Fuchs (2002) also reported that students with learning disabilities may experience difficulties in solving complex academic problems, particularly tasks that require multi-step reasoning.

However, more recent studies indicate that with appropriate instructional strategies and supportive learning environments, students with disabilities can successfully develop problem-solving skills. Evans, Bostic, and Yee (2024) observed that students with learning disabilities often demonstrate persistence and adaptive strategies during problem-solving tasks. Additionally, research on inclusive education suggests that supportive teaching practices, assistive technologies, and inclusive learning environments can significantly enhance students' cognitive and academic development (Oswal et al., 2025).

Other scholars have also emphasized the role of higher education in developing students' thinking skills. Halpern (2014) stated that critical thinking instruction improves students' ability to analyze problems and make effective decisions. Likewise, Jonassen (2011) argued that meaningful learning occurs when students are engaged in authentic problem-solving situations that require reasoning and decision-making.

Despite these contributions, there is still limited research comparing decision-making and problem-solving skills between students with and without disabilities at the higher education level. Therefore, further research is needed to explore differences in these skills and to identify strategies that can promote inclusive cognitive skill development among all students

Significance of the Study

Decision-making and problem-solving skills are important higher-order cognitive abilities that help students analyze situations, evaluate alternatives, and make effective decisions in academic and real-life contexts. Higher education institutions play a significant role in developing these skills, which contribute to students' academic success and professional readiness (Tawfik & Gatewood, 2020; Sailer et al., 2021).

Students with disabilities often face barriers such as limited accessibility, inadequate academic support, and social challenges that may influence the development of these cognitive skills (Gull, Kaur, & Basha, 2025). However, research suggests that with appropriate instructional support and inclusive teaching practices, students with disabilities can develop effective problem-solving strategies (Evans, Bostic, & Yee, 2024).

Therefore, the present study is significant as it examines the status of decision-making and problem-solving skills among students with and without disabilities at the higher education level. The findings may help educators and policymakers design inclusive educational strategies that support the development of essential life skills among all learners (Oswal et al., 2025).

Objectives of the Study

1) To examine the relationship between decision-making skills and problem-solving skills among higher education students.
2) To find out the present status of decision-making and problem-solving skills among disabled and non-disabled students at the higher education level in West Bengal.
3) To analyze the differences in decision-making and problem-solving skills with respect to variables such as gender, siblings and types of disability.

Hypotheses of the Study

$H_0$1: There is no significant relationship between decision-making skills and problem-solving skills among higher education students.
$H_0$2: There is no significant difference in decision-making and problem-solving skills between disabled and non-disabled students at the higher education level.
$H_0$3: There is no significant difference in decision-making and problem-solving skills based on gender, siblings and types of disability.

3. Research Methodology

The present study adopted a cross-sectional survey research design to compare the decision-making and problem-solving skills of students with and without disabilities at the higher education level in West Bengal. The population of the study consisted of students studying at the higher education level, including UG, PG, B.Ed., and research scholars from universities and colleges in different districts of West Bengal. A total sample of 207 students was selected through purposive sampling, which included 100 students with disabilities and 107 students without disabilities. The sample distribution is shown Table-1.

Table 1: Showing the Sample distribution

Gender * types of disability								Gender * disability		
			Types of disability				Total	Disability		
			CP	HI	OH	VI		Yes	No	
Gender	Male	Count	6	6	13	58	83	83	55	138
		%	85.71	75	68.42	87.88	83	83	51.40	66.67
	Female	Count	1	2	6	8	17	17	52	69
		%	14.29	25	31.58	12.12	17	17	48.60	33.33
Total		Count	7	8	19	66	100	100	107	207
		%	7	8	19	66	100	48.30	51.70	100

In this study, the independent variables were disability status, gender, class, number of siblings, family monthly income, habitat, caste, medium of instruction, and disability type, while the dependent variables were decision-making skill and problem-solving skill. Data were collected using a personal information schedule and the Life Skills Scale developed by M. N. Vranda (2009), from which 23 items related to decision-making and problem-solving skills were used. The collected data were analyzed using appropriate statistical techniques such as Mean, Standard Deviation, Independent Sample t-test, One-way ANOVA, and Pearson's Coefficient of Correlation with the help of SPSS (Version 21) for interpretation and analysis of the results.

4. Result and Discussion

The mean score of decision-making skill is 38.76 (SD = 4.129) and the mean score of problem-solving skill is 53.46 (SD = 6.633) among higher education students. The obtained mean scores fall in the high-level category according to the scale. Therefore, it can be interpreted that students at the higher education level possess a high level of decision-making and problem-solving skills**.** Table-2 showed the present status of decision-making skill and problem-solving skill level.

Table 2: Average score of Decision-making and Problem-solving skill among the students at higher education

Descriptive statistics					
	N	Minimum	Maximum	Mean	SD
Decision making	207	23	49	38.76	4.129
Problem solving	207	36	65	53.46	6.633

Based on the scoring criteria of the scale, the obtained mean scores fall within the high-level category for both decision-making and problem-solving skills. This indicates that the students at the higher education level demonstrate a high level of ability in analyzing situations, evaluating alternatives, and solving problems effectively. Therefore, it can be concluded that higher education students possess comparatively strong decision-making and problem-solving skills**,** which may support their academic performance and ability to deal with real-life challenges.

The result based on the $H_0$1 & objective-1 is shown table-2

Table 2: Showing the Co-efficient of Correlation between Decision Making Skill and Problem- Solving Skill

Pearson correlation between decision-making skills and problem-solving skills			
		Decision making	Problem solving
Decision making	Pearson Correlation	1	.649**
	Sig. (2-tailed)		.000
	N	207	207
Problem solving	Pearson Correlation	.649**	1
	Sig. (2-tailed)	.000	
	N	207	207
**. Correlation is significant at the 0.01 level (2-tailed).			

Table-2 shows the Pearson correlation between decision-making skills and problem-solving skills among higher education students. The obtained correlation coefficient is r = 0.649**,** which indicates a high positive relationship between the two variables. The significance value (p = 0.000) is less than 0.01, indicating that the relationship is statistically significant at the 0.01 level**.** Therefore, it can be interpreted that students who have higher decision-making skills also tend to have higher problem-solving skills**,** indicating a strong positive association between these two skills among higher education students.

Table 3: Displays the outcome based on $H_0$2 & objective-2

	Disability	N	Mean	SD	Mean difference	't' value	Remarks
Decision Making	Yes	100	38.65	4.11	- 0.210	-0.365	Sig. level – 0.716, P>0.05, Accept H0
	No	107	38.86	4.16			
Problem Solving	Yes	100	54.67	5.86	2.343	2.574	Sig. level – 0.011, P<0.05, Reject H0 at 0.05 level
	No	107	52.33	7.12			

The table-3 shows the comparison of decision-making and problem-solving skills between students with disabilities and students without disabilities. For decision-making skills, the mean scores of students with disabilities (M = 38.65, SD = 4.11) and without disabilities (M = 38.86, SD = 4.16) are very similar. The t-value (-0.365) with p = 0.716 (p > 0.05) indicates that the difference is not statistically significant, so the null hypothesis is accepted**.**

However, for problem-solving skills, the mean score of students with disabilities (M = 54.67, SD = 5.86) is higher than that of students without disabilities (M = 52.33, SD = 7.12). The t-value (2.574) with p = 0.011 (p < 0.05) shows a statistically significant difference, so the null hypothesis is rejected at the 0.05 level**.** This indicates that students with disabilities demonstrate significantly higher problem-solving skills than students without disabilities**.**

Overall, the findings reveal that while decision-making skills do not differ significantly between the two groups, problem-solving skills show a significant difference, suggesting that disability status may influence students' problem-solving abilities at the higher education level. This may be due to the development of adaptive and compensatory strategies among students with disabilities (Hallahan, Kauffman, & Pullen, 2015; Lerner & Johns, 2012).

Table 4: Displays the outcome based on H_03 & objective-3.

Group Statistics					H_03 testing (ANOVA & t- test)
	Gender	N	Mean	SD	H_0 testing based on t-test
Decision Making	Male	138	39.28	4.18	t = 2.582, df= 205, MD = 1.551, Sig. level – 0.011, P<0.05, Reject H_03 at 0.05 level
	Female	69	37.72	3.84	
Problem Solving	Male	138	54.04	6.38	t = 1.803, df= 205, MD = 1.754, Sig. level – 0.716, P>0.05, Accept H_03
	Female	69	52.29	7.00	
	No. Of Siblings	N	Mean	SD	F = 0.375, Sig. level = 0.688, P>0.05, Accept H_03
Decision Making	No	48	39.19	5.10	
	One	79	38.72	3.55	
	More than One	80	38.54	4.03	
Problem Solving	No	48	53.08	7.34	F = 0.204, Sig. level = 0.816, P>0.05, Accept H_03
	One	79	53.33	6.46	
	More than One	80	53.81	6.42	
	Types of Disability	N	Mean	SD	F = 2.916, Sig. level = 0.038, P<0.05, Reject H_03 at 0.05 level
Decision Making	Cerebral Palsy	7	42.29	2.752	
	Hearing Impairment	8	40.50	3.625	
	Orthopedic Handicap	19	38.37	4.139	
	Visual Impairment	66	38.12	4.093	
Problem Solving	Cerebral Palsy	7	61.43	.535	F = 3.743, Sig. level = 0.014, P<0.05, Reject H_03 at 0.05 level
	Hearing Impairment	8	55.25	4.268	
	Orthopedic Handicap	19	53.74	5.829	
	Visual Impairment	66	54.15	5.959	

The table-4 shows the findings revealed a significant difference in decision-making skills based on gender, with male students scoring higher than female students. This result is consistent with earlier research suggesting that gender differences in decision-making may arise due to variations in confidence levels, risk-taking tendencies, and socialization processes (Byrnes, Miller, & Schafer, 1999; Cross, Copping, & Campbell, 2011). Male students are often encouraged to take independent decisions, which may contribute to their higher scores. However, the present study found no significant gender difference in problem-solving skills, indicating that both male and female students possess comparable cognitive abilities in solving problems. This aligns with studies by Hyde (2005), who argued that gender differences in cognitive abilities are minimal and often overstated.

Regarding the number of siblings, the study found no significant differences in either decision-making or problem-solving skills. This suggests that family size alone does not play a crucial role in shaping these higher-order cognitive skills. Similar findings were reported by Downey (2001), who noted that the impact of sibling number on cognitive development is often mediated by other factors such as parental involvement and socioeconomic status rather than sibling count itself.

In contrast, the study identified significant differences based on types of disability in both decision-making and problem-solving skills. Students with cerebral palsy and hearing impairment demonstrated relatively higher mean scores compared to those with visual impairment and orthopedic handicap. These differences may be attributed to variations in educational support, accessibility of learning resources, and adaptive skill development. According to Hallahan, Kauffman, and Pullen (2015), the nature and severity of disability, along with the availability of assistive technologies and inclusive educational practices, significantly influence cognitive and functional skill development. Additionally, students with certain disabilities may develop compensatory strategies that enhance specific cognitive abilities (Lerner & Johns, 2012).

The findings emphasize that type of disability is a more influential factor than demographic variables such as siblings, while gender shows a limited and domain-specific effect. These results highlight the importance of providing tailored educational interventions and support systems to address the diverse needs of students with different disabilities.

5. Educational Implications

The findings suggest that educators should strengthen both decision-making and problem-solving skills through activity-based learning. Special attention should be given to inclusive education and tailored support for different types of disabilities. Additionally, institutions should promote equal opportunities regardless of gender and family background to enhance students' cognitive skill development.

6. Conclusion

The study concludes that higher education students possess high levels of decision-making and problem-solving skills, with a strong positive relationship between the two. While gender influences decision-making, it does not affect problem-solving, and number of siblings has no impact. However, type of disability significantly affects both skills,

and students with disabilities show better problem-solving ability, possibly due to adaptive strategies.

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