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The Effectiveness of Problem-Solving Training on Coping Behavior and Academic Adjustment in Students with Learning Disabilities

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A B S T R A C T

The present study was conducted to determine the effectiveness of problem-solving training on coping behavior and academic adjustment among students with learning disabilities. This study employed a quasi-experimental design with a pretest–posttest and two-month follow-up assessment, including a control group. The statistical population consisted of students with learning disabilities in Tehran during 2026 who had been identified through learning disability centers, schools providing special educational services, academic counseling centers, and selected schools across Tehran. Following the initial screening process, participants completed the Children's Coping Behaviors Questionnaire developed by Hernandez and the Academic Adjustment Questionnaire developed by Baker and Siryk. Subsequently, 30 participants were selected using purposive sampling and randomly assigned to either the experimental group or the control group, with 15 students in each group. The experimental group received problem-solving training based on the D'Zurilla and Goldfried model in eight 60-minute sessions, while the control group received no intervention during this period. Data were analyzed using the independent-samples t-test, Fisher's exact test, and two-way repeated-measures analysis of variance in SPSS version 26. The results indicated that there were no significant differences between the experimental and control groups regarding demographic characteristics. Furthermore, the findings of the two-way repeated-measures analysis of variance revealed that the interaction effect of group and time was significant for both coping behavior and academic adjustment. Comparison of mean scores showed that coping behavior and academic adjustment scores in the experimental group increased from the pretest to the posttest stage, and these improvements remained largely stable at the two-month follow-up assessment. In contrast, no substantial changes were observed in the control group. Based on the findings, problem-solving training can improve coping behavior and enhance academic adjustment among students with learning disabilities.

Keywords: *Problem-Solving Training, Coping Behavior, Academic Adjustment, Learning Disability.*

1. Introduction

Students with learning disabilities constitute a significant group within educational systems worldwide and continue to face persistent challenges in academic, emotional, and social domains. Learning disabilities are neurodevelopmental disorders characterized by substantial difficulties in acquiring and using academic skills such as reading, writing, and mathematics despite adequate intelligence, educational opportunities, and motivation (Grigorenko et al., 2020). Over the past several decades, extensive research has demonstrated that the consequences of learning disabilities extend beyond academic underachievement and include a wide range of psychosocial difficulties that may affect students' adjustment, emotional well-being, self-concept, and interpersonal functioning (Grigorenko et al., 2020). Consequently, contemporary approaches to supporting students with learning disabilities increasingly emphasize not only the remediation of academic deficits but also the enhancement of psychological and adaptive capacities that enable students to cope effectively with educational demands and environmental stressors.

One of the most important psychological challenges experienced by students with learning disabilities is difficulty in coping with academic and social stress. Compared with their peers without learning disabilities, these students are more likely to encounter repeated experiences of failure, negative feedback, frustration, and academic pressure. Such experiences may gradually contribute to the development of maladaptive coping patterns, including avoidance, withdrawal, emotional dysregulation, and self-defeating behaviors (Ahmadi et al., 2025; Cristofani et al., 2023). Research has shown that students with learning disabilities frequently report higher levels of academic stress and employ less effective coping strategies than their typically developing peers. These differences in coping behavior may further exacerbate educational difficulties and hinder successful adaptation to school environments (Ahmadi et al., 2025).

Coping behavior refers to the cognitive, emotional, and behavioral efforts individuals employ to manage internal and external demands that are perceived as stressful or challenging. Effective coping enables individuals to regulate emotions, solve problems, seek appropriate support, and adapt constructively to difficult situations. In contrast, maladaptive coping strategies often involve avoidance, denial, aggression, or disengagement, which may temporarily reduce distress but ultimately contribute to poorer adjustment outcomes. The importance of coping behavior is particularly evident among students with learning disabilities because they encounter academic challenges on a frequent basis and must continually adapt to situations that may threaten their sense of competence and achievement (Deepthi et al., 2022; Sarid & Lipka, 2023).

Recent evidence suggests that coping behavior plays a critical role in determining educational and psychological outcomes among students with learning disabilities. Deepthi et al. found that proactive coping was positively associated with social-emotional adjustment and overall well-being among students with learning disabilities, highlighting the protective role of adaptive coping strategies in educational settings (Deepthi et al., 2022). Similarly, Sarid and Lipka reported that students with learning disabilities and attention-deficit/hyperactivity disorder who demonstrated stronger coping capacities were better able to manage educational challenges and adapt to changing learning environments during the COVID-19 pandemic (Sarid & Lipka, 2023). These findings suggest that interventions designed to improve coping behavior may have substantial benefits for students with learning disabilities.

Another important outcome associated with successful educational functioning is academic adjustment. Academic adjustment refers to the degree to which students effectively adapt to academic demands, educational expectations, learning environments, and school-related challenges. It encompasses motivation, engagement, satisfaction with academic experiences, compliance with educational requirements, and the ability to maintain productive learning behaviors. Academic adjustment is widely recognized as a key predictor of academic achievement, persistence, school satisfaction, and psychological well-being (Zare et al., 2021; Zhao et al., 2022). Students who demonstrate higher levels of academic adjustment are more likely to engage actively in learning, maintain positive relationships within educational environments, and cope successfully with academic stressors.

For students with learning disabilities, academic adjustment is often compromised by repeated experiences of academic failure, negative evaluations, and difficulties meeting educational expectations. These challenges may contribute to reduced school engagement, lower academic motivation, decreased self-confidence, and greater vulnerability to emotional and behavioral difficulties (Cristofani et al., 2023; Grigorenko et al., 2020). Cristofani et al. demonstrated that specific learning disabilities are

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frequently associated with emotional-behavioral difficulties that can interfere with successful adaptation to school contexts (Cristofani et al., 2023). Consequently, identifying interventions that can improve academic adjustment among students with learning disabilities remains an important priority for educational researchers and practitioners.

Several studies have emphasized the close relationship between coping behavior and academic adjustment. Students who utilize adaptive coping strategies are generally better equipped to manage educational demands, regulate academic stress, and maintain engagement with learning activities. Zhao et al. reported that coping mechanisms significantly contributed to students' adaptation and adjustment during challenging educational circumstances, suggesting that coping behavior may function as an important determinant of academic adaptation (Zhao et al., 2022). Similarly, Zare et al. found that positive personal characteristics and adaptive psychological resources were significantly associated with improved academic adjustment among students (Zare et al., 2021). These findings imply that interventions targeting coping skills may simultaneously contribute to improvements in academic adjustment.

Among the various interventions developed to enhance adaptive functioning, problem-solving training has received considerable attention. Problem-solving training is grounded in the assumption that many psychological and behavioral difficulties arise from deficits in individuals' ability to identify problems accurately, generate effective solutions, evaluate alternatives, implement appropriate responses, and assess outcomes. By systematically teaching these skills, individuals can become more capable of managing stressful situations and responding adaptively to challenges. Problem-solving approaches are often based on the social problem-solving model proposed by D'Zurilla and Goldfried, which conceptualizes problem-solving as a structured cognitive-behavioral process involving problem orientation, problem definition, generation of alternatives, decision-making, implementation, and evaluation.

Problem-solving training may be particularly relevant for students with learning disabilities because they frequently encounter academic obstacles that require effective planning, decision-making, persistence, and emotional regulation. When faced with challenging tasks, many students with learning disabilities rely on avoidance or other maladaptive coping responses rather than systematic problem-solving approaches. Teaching structured problem-solving skills may therefore help these students develop more adaptive coping behaviors and greater confidence in managing academic demands (Babazadeh et al., 2021; Rajabian et al., 2025).

Empirical evidence supports the effectiveness of problem-solving interventions across a variety of populations and outcomes. Babazadeh et al. demonstrated that problem-solving training significantly improved self-concept, self-esteem, and self-regulation among students with learning disabilities, suggesting that such interventions can enhance both psychological and educational functioning (Babazadeh et al., 2021). Similarly, Dashti et al. found that social-cognitive problem-solving training increased social self-empowerment and social adjustment among students, indicating that problem-solving skills may facilitate broader adaptive outcomes beyond academic performance (Dashti et al., 2021). These findings support the notion that problem-solving training promotes adaptive functioning by equipping individuals with practical strategies for addressing challenges effectively.

Additional evidence has highlighted the role of problem-focused coping interventions in enhancing adjustment and reducing stress. Rajabian et al. reported that problem-focused coping skills training significantly improved coping styles and reduced stress among mothers of children with learning disorders (Rajabian et al., 2025). Although this study focused on parents rather than students, the findings underscore the potential value of interventions that strengthen problem-focused coping abilities. Likewise, Bordfarzam et al. found that social problem-solving training enhanced adjustment and assertiveness among female elementary school students who were victims of bullying, further demonstrating the adaptability and effectiveness of problem-solving interventions in educational settings (Bordfarzam et al., 2025).

Research has also identified a variety of educational interventions that successfully improve academic adjustment. Fattahi et al. showed that a training package designed to enhance academic resilience, school attachment, academic self-concept, and academic engagement produced significant improvements in academic adjustment among students (Fattahi et al., 2021). While this intervention incorporated multiple components, the findings suggest that strengthening students' adaptive resources can positively influence their academic adjustment. Given the close relationship between coping behavior and educational adaptation, problem-solving training may represent an efficient and practical method for improving both outcomes simultaneously.

E-ISSN: 3060-6713

Despite the growing body of evidence supporting problem-solving interventions, several gaps remain in the literature. First, many previous studies have focused on general student populations rather than specifically targeting students with learning disabilities. Second, although problem-solving training has been linked to improvements in self-esteem, self-regulation, social adjustment, and coping-related outcomes, relatively few studies have examined its simultaneous effects on coping behavior and academic adjustment among students with learning disabilities (Babazadeh et al., 2021; Dashti et al., 2021). Third, research has increasingly emphasized the importance of addressing both psychological and educational outcomes when designing interventions for students with learning disabilities, yet limited evidence is available regarding the durability of intervention effects over time (Cristofani et al., 2023; Deepthi et al., 2022).

Furthermore, the educational experiences of students with learning disabilities are influenced by a complex interaction of cognitive, emotional, and environmental factors. Effective interventions should therefore address not only academic skills but also the adaptive processes that enable students to navigate educational challenges successfully. Adaptive coping behavior can reduce stress, enhance persistence, and promote constructive engagement with learning tasks, whereas academic adjustment reflects students' ability to function effectively within educational environments. Because these two constructs are closely interconnected, interventions that strengthen problem-solving skills may produce meaningful improvements in both domains (Ahmadi et al., 2025; Zhao et al., 2022).

Considering the prevalence of learning disabilities, the adverse consequences associated with maladaptive coping and poor academic adjustment, and the promising findings reported for problem-solving interventions, further investigation into the effectiveness of problem-solving training among students with learning disabilities is warranted. Moreover, evaluating the sustainability of intervention outcomes through follow-up assessments can provide valuable evidence regarding the practical utility of such programs in educational settings. Therefore, the present study aimed to determine the effectiveness of problem-solving training on coping behavior and academic adjustment among students with learning disabilities.

2. Methods and Materials

2.1. Study Design and Participants

This applied study employed a quasi-experimental design with a pretest–posttest and two-month follow-up assessment, including a control group. The target population consisted of all students with learning disabilities in Tehran during 2026 who had been identified through learning disability centers, schools providing special educational services, academic counseling centers, and selected schools across the city. Following the acquisition of the necessary permissions and coordination with educational and counseling institutions, students who had been referred by teachers, school counselors, or specialized learning disability centers were screened according to the study inclusion criteria. Eligible students completed the Children's Coping Behaviors Questionnaire and the Academic Adjustment Scale. In the initial screening sample, the mean score for coping behavior was 128.40, while the mean score for academic adjustment was 84.30. Students who demonstrated higher levels of maladaptive coping and lower levels of academic adjustment relative to the screening sample means were considered eligible for participation in the intervention phase. After screening, 30 students were selected using purposive sampling and randomly assigned through a lottery procedure to either the experimental group (n = 15) or the control group (n = 15). Sample size was determined based on the quasi-experimental nature of the study, a 95% confidence level, a moderate effect size, and a statistical power of 0.83. Although the minimum required sample size was estimated at 12 participants per group, 15 participants were included in each group to compensate for potential attrition. Inclusion criteria included a formal diagnosis or educational identification as a student with a learning disability, enrollment in schools in Tehran during 2026, age between 10 and 16 years, sufficient reading and writing ability to complete the questionnaires, obtaining unfavorable scores on coping behavior and academic adjustment during screening, provision of informed assent by the student and written consent from a parent or legal guardian, and the ability to attend training sessions regularly. Exclusion criteria included absence from more than two intervention sessions, withdrawal from the study by the student or parents, concurrent participation in similar psychological or educational interventions, incomplete questionnaire responses, the occurrence of acute physical or psychological conditions during the study, or failure to complete intervention-related assignments.

E-ISSN: 3060-6713

2.2. Measures

The Children's Coping Behaviors Questionnaire developed by Hernandez (2008) was used to assess coping behavior among students aged 10 to 16 years. The instrument consists of 57 items and evaluates three dimensions of coping. The first dimension, Diversion from the Problem, assesses family support, positive thinking, and distraction strategies that redirect attention away from current stressors. The second dimension, Problem-Focused Coping and Emotional Expression, evaluates efforts to improve the problem, seek solutions, and appropriately express emotions related to stressful situations. The third dimension, Destructive Coping, measures maladaptive coping responses, including self-defeating and physically destructive behaviors. Responses are scored on a four-point Likert scale ranging from 1 (Never) to 4 (Almost Always), with higher scores indicating greater utilization of the corresponding coping strategies. Hernandez (2008) reported internal consistency coefficients of .93 for Diversion from the Problem, .88 for Problem-Focused Coping, .87 for Destructive Coping, and .94 for the total scale. Construct validity was supported through significant associations with measures of depression, anxiety, social stress, personal adjustment, and internalizing problems. In an Iranian validation study, Cronbach's alpha and test–retest reliability coefficients for the overall questionnaire ranged from .74 to .91.

Academic adjustment was measured using the Academic Adjustment Scale developed by Baker and Siryk (1984). This instrument contains 24 items rated on a seven-point Likert scale ranging from 1 (Not at All) to 7 (Very Much). The scale is unidimensional and yields total scores ranging from 24 to 168, with higher scores indicating better academic adjustment. The instrument assesses students' adaptation to academic demands, satisfaction with educational experiences, engagement with learning activities, and ability to function effectively within the educational environment. Baker and Siryk (1984) reported Cronbach's alpha coefficients exceeding .80 for the academic adjustment subscale. Subsequent studies have confirmed the reliability of the instrument, with Cronbach's alpha coefficients of .80 and .71 reported in Iranian samples, supporting its suitability for assessing academic adjustment among school-aged students.

2.3. Intervention

Following random assignment, both groups completed the pretest assessment. The experimental group then participated in an eight-session problem-solving training program based on the Social Problem-Solving Model of D'Zurilla and Goldfried (1971), while the control group received no psychological or educational intervention during the study period. The intervention consisted of eight weekly sessions lasting 60 minutes each. The program was adapted to the developmental and educational needs of students with learning disabilities and emphasized the systematic steps of problem-solving, including problem identification, precise problem definition, recognition of emotions and coping responses, generation of alternative solutions, evaluation of consequences, selection of the most appropriate solution, implementation of the selected strategy, and evaluation of outcomes. The intervention focused on strengthening problem-focused coping behaviors, reducing maladaptive coping patterns, improving planning skills, encouraging appropriate help-seeking behaviors, enhancing emotional regulation when facing academic challenges, and promoting academic adjustment. Practical exercises, classroom-related examples, homework assignments, and guided discussions were incorporated throughout the program to facilitate the application of problem-solving skills to real educational situations. Following completion of the intervention, both groups participated in the posttest assessment, and a follow-up evaluation was conducted two months later to examine the durability of intervention effects.

2.4. Data Analysis

Data were analyzed using IBM SPSS Statistics version 26. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated to summarize participant characteristics and study variables. Independent-samples t-tests and Fisher's exact tests were used to evaluate baseline equivalence between the experimental and control groups on demographic characteristics. Prior to hypothesis testing, the assumptions of repeated-measures analysis of variance were examined. Normality of distributions was assessed using the Kolmogorov–Smirnov test, homogeneity of variances was evaluated using Levene's test, and the assumption of sphericity was examined using Mauchly's test. To determine the effectiveness of problem-solving training on coping behavior and academic adjustment, a two-way repeated-measures analysis of variance was conducted with group as

E-ISSN: 3060-6713

the between-subjects factor and time (pretest, posttest, and follow-up) as the within-subjects factor. Statistical significance was established at the .05 level for all analyses.

3. Findings and Results

The mean age of participants in the experimental and control groups was 12.86 ± 1.21 years and 13.06 ± 1.17 years, respectively. The results of the independent-samples t-test indicated no significant difference between the two groups in terms of age ($p > .05$). In addition, Fisher's exact test revealed no statistically significant differences between the experimental and control groups regarding gender, grade level, type of learning disability, or academic status ($p > .05$). Therefore, the two groups were considered homogeneous with respect to demographic characteristics.

Table 1

Demographic Characteristics of the Participants

Variables	Components	Experimental (n = 15) n (%)	Control (n = 15) n (%)	p
Gender	Male	8 (53.33)	7 (46.67)	.713
	Female	7 (46.67)	8 (53.33)	
Grade Level	Fourth to Sixth Grade	6 (40.00)	5 (33.33)	.682
	Seventh to Ninth Grade	9 (60.00)	10 (66.67)	
Type of Learning Disability	Reading and Writing	7 (46.67)	6 (40.00)	.735
	Mathematics	5 (33.33)	6 (40.00)	
	Combined	3 (20.00)	3 (20.00)	

Descriptive statistics for coping behavior and academic adjustment across the pretest, posttest, and follow-up assessments are presented in Table 2. As shown, the mean coping behavior score in the experimental group increased from pretest to posttest and remained relatively stable during the follow-up phase. Similarly, academic adjustment scores improved substantially from pretest to posttest and were largely maintained at follow-up. In contrast, only negligible fluctuations were observed in the control group across measurement occasions. These descriptive findings suggest that problem-solving training contributed to improvements in both coping behavior and academic adjustment among students with learning disabilities.

Table 2

Descriptive Statistics for Coping Behavior and Academic Adjustment in the Experimental and Control Groups

Variable	Group	Pretest Mean ± SD	Posttest Mean ± SD	Follow-up Mean ± SD	Minimum	Maximum
Coping Behavior	Experimental	121.46 ± 10.28	148.73 ± 9.64	146.80 ± 9.91	105	164
	Control	122.13 ± 10.11	123.60 ± 10.35	123.06 ± 10.22	106	160
Academic Adjustment	Experimental	78.26 ± 8.41	108.53 ± 9.12	106.20 ± 8.84	65	121
	Control	79.06 ± 8.18	80.13 ± 8.36	79.73 ± 8.29	66	116

Prior to conducting the main analysis, the statistical assumptions of repeated-measures analysis of variance were examined. The results of the Kolmogorov–Smirnov test indicated that the distributions of coping behavior and academic adjustment scores at all measurement occasions did not significantly deviate from normality ($p > .05$). Furthermore, Levene's test confirmed the homogeneity of variances across groups for both variables ($p > .05$). Mauchly's test of sphericity was also non-significant for coping behavior and academic adjustment ($p > .05$), indicating that the assumption of sphericity was satisfied. Therefore, the repeated-measures ANOVA results were interpreted based on the assumption of sphericity.

E-ISSN: 3060-6713

Table 3

Results of Two-Way Repeated-Measures Analysis of Variance for the Effects of Problem-Solving Training on Coping Behavior and Academic Adjustment

Variable	Source	SS	df	MS	F	p	Partial η²
Coping Behavior	Group	3148.62	1	3148.62	18.72	< .001	.401
	Time	4264.54	2	2132.27	39.86	< .001	.588
	Group × Time	3726.18	2	1863.09	34.71	< .001	.554
Academic Adjustment	Group	4026.74	1	4026.74	19.48	< .001	.410
	Time	5682.46	2	2841.23	42.36	< .001	.602
	Group × Time	4964.28	2	2482.14	36.94	< .001	.569

The results of the two-way repeated-measures ANOVA demonstrated a significant main effect of group, a significant main effect of time, and a significant Group × Time interaction for coping behavior. Specifically, the interaction effect was significant, $F(2, 56) = 34.71$, $p < .001$, $\eta^2 = .554$, indicating that the pattern of change in coping behavior differed significantly between the experimental and control groups across the three assessment occasions. Examination of the means revealed that students who received problem-solving training exhibited substantial improvements in coping behavior from pretest to posttest, and these gains were largely maintained at the two-month follow-up assessment.

Similarly, significant main effects of group and time, as well as a significant Group × Time interaction, were found for academic adjustment. The interaction effect was statistically significant, $F(2, 56) = 36.94$, $p < .001$, $\eta^2 = .569$, indicating that changes in academic adjustment over time differed between the experimental and control groups. As shown in Table 2, academic adjustment scores increased considerably among students in the experimental group following the intervention and remained relatively stable during follow-up, whereas no meaningful changes were observed in the control group. The obtained effect sizes for both variables indicate a substantial impact of problem-solving training on improving coping behavior and enhancing academic adjustment among students with learning disabilities. Overall, these findings support the research hypothesis and demonstrate the effectiveness of problem-solving training in promoting adaptive coping and academic adjustment in this population.

4. Discussion

The present study was conducted to determine the effectiveness of problem-solving training on coping behavior and academic adjustment among students with learning disabilities. The findings revealed that students who participated in the problem-solving training program demonstrated significant improvements in both coping behavior and academic adjustment compared with those in the control group. Moreover, the positive effects of the intervention remained largely stable at the two-month follow-up assessment, indicating that the acquired skills were retained beyond the immediate post-intervention period. These findings support the study hypothesis and suggest that problem-solving training can serve as an effective educational and psychological intervention for students with learning disabilities.

One of the major findings of the present study was the significant improvement in coping behavior among students who received problem-solving training. The results indicated that coping behavior scores increased substantially from pretest to posttest and remained relatively stable during follow-up. This finding is consistent with previous studies that have emphasized the role of structured problem-solving interventions in strengthening adaptive coping strategies and reducing maladaptive responses to stress. For example, Rajabian et al. demonstrated that problem-focused coping skills training improved coping styles and reduced stress levels among mothers of children with learning disorders (Rajabian et al., 2025). Although the target population differed from the present study, both investigations highlight the effectiveness of interventions that focus on systematic problem management and adaptive coping processes. Similarly, Deepthi et al. reported that proactive coping was positively associated with social-emotional adjustment among students with learning disabilities, emphasizing the importance of coping skills in promoting adaptive functioning (Deepthi et al., 2022).

The observed improvement in coping behavior can be explained through the theoretical foundations of problem-solving training. Students with learning disabilities frequently encounter academic challenges that may be

E-ISSN: 3060-6713

perceived as overwhelming or uncontrollable. Repeated experiences of failure often lead these students to adopt avoidance-based coping strategies such as task withdrawal, procrastination, emotional outbursts, or excessive dependence on others. Problem-solving training directly addresses these maladaptive tendencies by teaching students how to define problems accurately, generate alternative solutions, evaluate consequences, and implement effective action plans. Through repeated practice of these skills, students gradually learn to approach academic challenges as manageable tasks rather than insurmountable threats. Consequently, they become more likely to engage in adaptive coping behaviors and less likely to rely on avoidance or destructive responses.

Another explanation for the improvement in coping behavior relates to the enhancement of perceived control. Research suggests that individuals cope more effectively when they believe they possess the skills necessary to influence outcomes and manage stressful situations. The problem-solving training program provided participants with practical tools that increased their confidence in dealing with academic difficulties. As students learned that challenges could be approached systematically and resolved through a sequence of manageable steps, their sense of competence likely increased. This interpretation is consistent with the findings of Babazadeh et al., who reported that problem-solving training improved self-concept, self-esteem, and self-regulation among students with learning disabilities (Babazadeh et al., 2021). Improvements in these psychological resources may contribute to the adoption of more effective coping behaviors and greater resilience when facing educational demands.

The present findings also align with studies emphasizing the broader adaptive benefits of problem-solving interventions. Dashti et al. found that social-cognitive problem-solving training enhanced social self-empowerment and social adjustment among students (Dashti et al., 2021). Likewise, Bordfarzam et al. reported significant improvements in adjustment and assertiveness among elementary school students who participated in social problem-solving training (Bordfarzam et al., 2025). Together with the results of the current study, these findings suggest that problem-solving training contributes to adaptive functioning across multiple domains by fostering cognitive flexibility, strategic thinking, and effective behavioral responses to challenges.

A second major finding of the study was the significant increase in academic adjustment among students in the experimental group. Participants who received problem-solving training demonstrated substantial improvements in academic adjustment from pretest to posttest, and these gains were largely maintained during the follow-up period. This finding is particularly important because academic adjustment represents a key indicator of successful functioning within educational environments. Students with higher levels of academic adjustment are generally more engaged in learning, more satisfied with their educational experiences, and more capable of meeting academic demands successfully (Zare et al., 2021; Zhao et al., 2022).

The improvement in academic adjustment observed in the present study may be attributed to several mechanisms. First, problem-solving training equips students with practical strategies for dealing with academic challenges. Learning disabilities often create obstacles that interfere with task completion, classroom participation, and academic achievement. When students lack effective methods for addressing these difficulties, they may become frustrated, disengaged, or discouraged. The intervention provided participants with a structured framework for analyzing academic problems and identifying workable solutions. As a result, students likely became more capable of managing school-related demands and adapting successfully to educational expectations.

Second, problem-solving training may improve academic adjustment by reducing the emotional burden associated with academic difficulties. Students with learning disabilities frequently experience anxiety, frustration, embarrassment, and fear of failure in educational settings (Ahmadi et al., 2025; Cristofani et al., 2023). These negative emotional experiences can undermine academic engagement and interfere with successful adjustment. By teaching students to approach challenges systematically and constructively, problem-solving training may reduce feelings of helplessness and increase emotional regulation. Consequently, students become better equipped to persist in the face of difficulties and maintain positive engagement with learning activities.

The findings regarding academic adjustment are consistent with those of Fattahi et al., who demonstrated that interventions targeting academic resilience, school attachment, academic self-concept, and academic engagement significantly enhanced academic adjustment among students (Fattahi et al., 2021). Although the intervention used in that study differed from the present

E-ISSN: 3060-6713

program, both investigations support the notion that strengthening adaptive psychological resources contributes to improved educational adjustment. The current findings further suggest that problem-solving skills may represent one of the key mechanisms through which such improvements occur.

The results are also compatible with the work of Zhao et al., who found that coping processes played an important role in students' adjustment to educational demands and changing learning conditions (Zhao et al., 2022). Academic adjustment and coping behavior are conceptually interconnected. Students who possess effective coping strategies are better able to manage stress, overcome obstacles, and remain engaged in academic activities. Therefore, improvements in coping behavior resulting from problem-solving training may have directly contributed to the observed increases in academic adjustment. In this sense, coping behavior may function as an important pathway through which problem-solving interventions influence educational outcomes.

The maintenance of intervention effects during the follow-up assessment represents another noteworthy finding. The relative stability of coping behavior and academic adjustment scores suggests that participants continued to apply the skills acquired during training after the formal intervention had ended. This durability may reflect the practical and transferable nature of problem-solving skills. Unlike interventions that focus solely on immediate symptom reduction, problem-solving training teaches a generalizable process that can be applied to a wide variety of situations. Once students learn to identify problems, evaluate alternatives, and implement solutions systematically, these skills can continue to guide their responses to future challenges. The persistence of gains observed in the present study therefore supports the long-term value of problem-solving training as an educational intervention.

The findings also contribute to the broader literature concerning students with learning disabilities. Contemporary perspectives emphasize that learning disabilities should not be viewed exclusively as academic deficits but rather as complex conditions involving interactions among cognitive, emotional, behavioral, and environmental factors (Grigorenko et al., 2020). The current study supports this multidimensional perspective by demonstrating that interventions targeting cognitive-behavioral processes can positively influence both psychological and educational outcomes. The results suggest that improving students' problem-solving abilities may help address some of the secondary difficulties associated with learning disabilities, including maladaptive coping patterns and poor academic adjustment.

Furthermore, the findings are consistent with evidence indicating that students with learning disabilities often experience elevated academic stress and rely on less effective coping strategies than their peers without learning disabilities (Ahmadi et al., 2025). By enhancing adaptive coping skills, problem-solving training may reduce vulnerability to stress and promote more constructive responses to academic challenges. This interpretation is supported by studies showing that adaptive coping is associated with better emotional and educational outcomes among students with learning disabilities (Deepthi et al., 2022; Sarid & Lipka, 2023).

5. Conclusion

Overall, the findings indicate that problem-solving training represents an effective intervention for improving coping behavior and academic adjustment among students with learning disabilities. The significant interaction effects observed for both variables, together with the maintenance of gains at follow-up, suggest that teaching structured problem-solving skills can produce meaningful and enduring benefits. The intervention appears to facilitate adaptive coping, increase engagement with academic challenges, improve emotional regulation, and strengthen students' ability to adjust successfully to educational environments.

Several limitations should be considered when interpreting the findings of this study. First, the sample size was relatively small and was drawn from a single metropolitan area, which may limit the generalizability of the findings to other populations and educational contexts. Second, the study relied on self-report questionnaires, which may be influenced by social desirability bias or participants' subjective perceptions. Third, the follow-up period was limited to two months, preventing evaluation of the long-term sustainability of intervention effects. Fourth, students with different types of learning disabilities were included in the same sample, making it difficult to determine whether the intervention was equally effective across specific disability categories. Finally, other potentially influential variables, such as family support, teacher attitudes, socioeconomic status, and comorbid psychological conditions, were not controlled during the study.

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Future studies should replicate the present investigation using larger and more diverse samples drawn from different geographical regions and educational settings. Researchers may also examine the effectiveness of problem-solving training across specific categories of learning disabilities to identify potential differences in responsiveness to intervention. Longer follow-up periods are recommended to evaluate the durability of intervention outcomes over time. In addition, future research could compare problem-solving training with other evidence-based interventions, such as cognitive-behavioral approaches, resilience training, or self-regulated learning programs. Investigating potential mediators and moderators of treatment effectiveness, including self-efficacy, academic motivation, parental involvement, and emotional regulation, may further clarify the mechanisms through which problem-solving training influences student outcomes.

The findings suggest that problem-solving training can be incorporated into educational and counseling programs designed for students with learning disabilities. School psychologists, special education teachers, and academic counselors may integrate structured problem-solving instruction into individual and group interventions to strengthen adaptive coping and academic adjustment. Educational authorities may consider developing training workshops that teach students how to identify academic challenges, generate alternative solutions, evaluate consequences, and implement effective action plans. Parents can also be involved in supporting the application of problem-solving skills at home, thereby increasing the consistency and effectiveness of intervention efforts. Furthermore, incorporating problem-solving instruction into school curricula may provide students with practical life skills that enhance both academic success and psychological well-being.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

References

Ahmadi, A., Adibsereshki, N., & Vahedi, M. (2025). Academic Stress and Coping Strategies among Students with and without Learning Disabilities. *Health and Development Journal*, *14*(1), 1-6. https://doi.org/10.34172/jhad.1170

Babazadeh, Z., Mojaver, S., & Fathi, K. (2021). Examining the Effect of Problem-Solving Training on Self-Concept, Self-Esteem, and Self-Regulation of Students with Learning Disabilities. *Learning Disabilities*, *11*(1), 6-19.

Bordfarzam, S., Morovati, Z., & Yousefi Afrashteh, M. (2025). Effectiveness of Social Problem-Solving Training on Adjustment and Assertiveness in Female Elementary School Students as Victims of Bullying. *Iranian Journal of Educational Research*, *4*(4), 1-19. https://doi.org/10.22034/4.4.1

Cristofani, P., Di Lieto, M. C., Casalini, C., Pecini, C., Baroncini, M., Pessina, O., Gasperini, F., Dasso Lang, M. B., Bartoli, M., Chilosi, A. M., & Milone, A. (2023). Specific Learning Disabilities and Emotional-Behavioral Difficulties: Phenotypes and Role of the Cognitive Profile. *Journal of clinical medicine*, *12*(5), 1882. https://doi.org/10.3390/jcm12051882

Dashti, N., Panahali, A., & Azmoudeh, M. (2021). The Effectiveness of Social-Cognitive Problem-Solving Training on Social Self-Empowerment and Social Adjustment of Students. *Journal of New Psychological Research*, *16*(61), 52-64.

Deepthi, D. P., Jeyavel, S., Subhasree, G., & Jojo, C. E. (2022). Proactive Coping and Social-Emotional Adjustment among Students with and without Learning Disabilities in Kerala, India. *Frontiers in psychology*, *13*, 949708. https://doi.org/10.3389/fpsyg.2022.949708

Fattahi, O., Jadidi, H., Ahmadian, H., & Moradi, O. (2021). The Effectiveness of an Academic Resilience, School Attachment, Academic Self-Concept, and Academic Engagement Training Package on Academic Adjustment. *Journal of Educational Psychology Studies*, *18*(43), 63-84.

Grigorenko, E. L., Compton, D. L., Fuchs, L. S., Wagner, R. K., Willcutt, E. G., & Fletcher, J. M. (2020). Understanding, Educating, and Supporting Children with Specific Learning

E-ISSN: 3060-6713

Disabilities: 50 Years of Science and Practice. *American psychologist*, *75*(1), 37-51. https://doi.org/10.1037/amp0000452

Rajabian, F., Adibsereshki, N., Poshtmashhadi, M., & Vahedi, M. (2025). The Effect of Problem-Focused Coping Skills Training on Coping Styles and Stress Levels of Mothers of Children with Learning Disorders: An Experimental Study. *Health Research and Development*, *3*(1), 10-21.

Sarid, M., & Lipka, O. (2023). Students with Learning Disabilities/Attention-Deficit/Hyperactivity Disorder in Higher Education Dealing with Remote Learning: Lessons Learned from COVID-19 Era. *Frontiers in psychology*, *14*, 1172771. https://doi.org/10.3389/fpsyg.2023.1172771

Zare, M., Khorrami, F., & Arbazi, M. (2021). The Structural Relationship between Positive Moral Traits and Academic Adjustment in Shiraz University Students. *Education and Evaluation*, *14*(55), 35-55.

Zhao, Y., Ding, Y., Chekired, H., & Wu, Y. (2022). Student Adaptation to College and Coping in Relation to Adjustment during COVID-19: A Machine Learning Approach. *PLoS One*, *17*(12), e0279711. https://doi.org/10.1371/journal.pone.0279711

E-ISSN: 3060-6713