

Early Interventions And Their Impact On Social Skills And Academic Performance In Children With Specific Learning Disabilities.

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ABSTRACT

The purpose of this study was to evaluate the impact of early interventions on the social and core academic abilities of children with Specific Learning Disabilities (SLD). A total of 200 children participated in the study, evenly divided into experimental and control groups. Efforts were made to improve both social and academic skills through targeted techniques. Children in the experimental group showed significant improvements, increasing from 0% at the pretest to 89% by the ninth month. Similarly, 49% of the children attained good academic achievement by the end of the study, moving from the low to the good achievement category. Both academic and social outcomes were minimally improved in the control group. Children with SLD need early, structured interventions to enhance their social competence as well as their academic performance. Study findings highlight the complexity of social and academic skills in children with learning disabilities, emphasizing the need to address both areas in educational interventions.

Keywords: Social skills, Learning disabilities, Academic achievements, Interventions, Dyslexia.

INTRODUCTION

Specific learning disabilities (SLDs) encompass a wide range of conditions that involve difficulties in processing language, both spoken and written. These disabilities manifest in various forms, such as challenges in understanding language, speaking, reading, writing, spelling, and performing calculations. Common types of SLDs include perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia, and developmental aphasia [1]. In India, school-going children are particularly vulnerable to SLDs, which often remain unnoticed. Studies indicate that the prevalence of SLDs ranges from 5% to 17%, highlighting the significant impact these conditions have on education [2]. SLDs present numerous challenges, including difficulties in processing spoken and written language, which in turn affects comprehension, verbal communication, literacy, and

numeracy skills. Despite their prevalence, SLDs are frequently overlooked, underscoring the need for increased awareness and targeted interventions to support affected students [3]. To effectively address the needs of students with SLDs, special education must be tailored to the individual, recognizing each student's unique strengths, challenges, and learning styles. An inclusive environment that promotes equity and fairness is essential in supporting these students. By adopting a comprehensive approach to special education, educational systems can better accommodate the diverse needs of students, facilitating more inclusive and accessible learning experiences. The prevalence of SLDs in the sampled population was found to be 15.17%, with specific types of SLDs affecting varying percentages of children: 12.5% with dysgraphia, 11.2% with dyslexia, and 10.5% with dyscalculia [4]. The study employed simplified screening methods and tools to enhance the identification process, reduce the need for costly investigations, and optimize the screening process. These findings highlight the need for further prevalence studies in India to better understand the nuances of SLDs and the importance of implementing remedial education and policy interventions in mainstream education. Without these interventions, SLDs cannot be effectively managed, and the education system will continue to fall short in ensuring academic success for all children [5].

Children with SLDs face significant learning obstacles that prevent them from reaching their academic potential and fully benefiting from education. Unfortunately, these children are often misunderstood, mislabeled, and perceived as incompetent due to their learning challenges. SLDs frequently go undiagnosed, leading concerned parents and teachers to mistakenly place blame on the child, causing anxiety for both the child and their parents. Moreover, children with SLDs are often stigmatized and less liked compared to their peers without the disorder. It is estimated that up to 30% of children with SLD have comorbid behavioral and emotional disorders [6]. These comorbid conditions further contribute to the children's diminished positive emotions and well-being, emphasizing the need for emotional development interventions. The sociometric profile of these students often places them at the bottom of their class, leading to feelings of loneliness, especially during adolescence—a critical period for identity formation and self-evaluation [7-10]. The interventions designed to support children with SLD aim not only to improve their social well-being but also to address the needs of children facing other challenges, such as those with slow learning conditions, intellectual disabilities, psychological disorders, and personality disorders [11, 12].

METHODOLOGY

Study Objective:

The primary objective of this study is to assess the social skills and academic performance of children diagnosed with specific learning disabilities (SLDs).

Sampling Technique:

The study employed a survey method for the initial screening of specific learning disabilities, followed by purposive sampling to select participants for the experimental and control groups.

Selection Criteria:

Inclusion Criteria:

Children enrolled in grades III to VIII.

Children whose parents provided informed consent.

Children diagnosed with SLD categories including Dyslexia, Dysgraphia, and Dyscalculia.

Parental or guardian consent on behalf of the child.

Exclusion Criteria:

Children with SLD who have other comorbidities or physical disabilities.

Children diagnosed with intellectual disabilities, ADHD, or Autism.

Children whose parents did not provide consent.

Study Sample:

The study involved a total of 200 participants, divided evenly between two groups: 100 in the experimental group and 100 in the control group. This equal distribution allowed for a balanced and fair evaluation of the intervention's effectiveness.

Study Site:

The research was conducted across ten schools, with five schools allocated to the experimental group and five to the control group. Schools were carefully selected to ensure a diverse and representative sample. The PRASHAST-Disability Screening Checklist was used during the screening phase to identify potential learning disabilities. PRASHAST Parts I and II help in screening and categorizing disabilities as per the RPwD Act, 2016, enabling further identification and certification. Confirmation of SLD was further validated by teachers using tools from the National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD). This multi-step process was designed to ensure the accuracy and reliability of SLD identification.

Tool Description:

Early Intervention Techniques:

The intervention for children identified with SLD focused on enhancing core academic skills through various techniques. These included Phonetics-Letter Sound Association, Orton-Gillingham Multi-Sensory Techniques, Flash Card Drills, Repeated Oral Reading (ROR), Paired Reading, Syllable Division, Chunking Text, and Strategies for Sentence Writing. Reading skills were assessed using Word/Minute tests, with progress tracked on a graph chart. Spelling and comprehension were addressed using Curriculum-Based Management (CBM) training, and reading fluency was improved through Repeated Oral Reading (ROR). A specific program (BT - Improve) was used to enhance attention and eye coordination. These targeted interventions aimed to address specific challenges and promote overall academic development in children with SLD.

Social Skills Assessment:

The social skills of students with SLD were assessed using a tool developed by Dr. Ganesh in his study titled "Academic skills, behaviour problems, and social skills of children with dyslexia." This tool consists of 28 questions, divided equally between positive and negative statements. Positive scores are assigned based on a Likert scale from 1 to 4, with "never" being the lowest score. Negative questions are scored in reverse. The positive questions include items 1, 2, 6, 8, 9, 10, 11, 12, 16, 17, 21, 22, 24, 25, and 26, while the negative questions include items 3, 4, 5, 7, 13, 14, 15, 18, 19, 20, 23, 27, and 28.

Core Academic Achievement Assessment:

The NIMHANS assessment tool was used to evaluate the core academic achievements of individuals with SLD. This tool undergoes a systematic process to establish its reliability, using internal consistency measures such as Cronbach's alpha. To determine concurrent validity, NIMHANS scores were compared with established academic measures. The comprehensive approach of NIMHANS reinforces its reliability in identifying SLD in both clinical and educational settings.

RESULTS

Table:1 Assessment of social skills among children with specific learning disabilities on Experimental group

Experimental Group Social skill	PRETEST		POST TEST						χ^2 and df	P value
			Post test 1 (3rd month)		Post test 2 (6th month)		Post test 3 (9th month)			
	N	%	N	%	N	%	N	%	$\chi^2=213.7$ df =3	<0.0001 HS
Low	100	100	69	69%	19	19%	11	11%		
Good	0	0	31	31%	81	81%	89	89%		
Total	100	100	100		100		100			
Mean+Standard deviation	37.09±1.90		50.87±4.82		61.29±8.56		69.27±8.75			
P value			<0.0001		<0.0001		<0.0001			

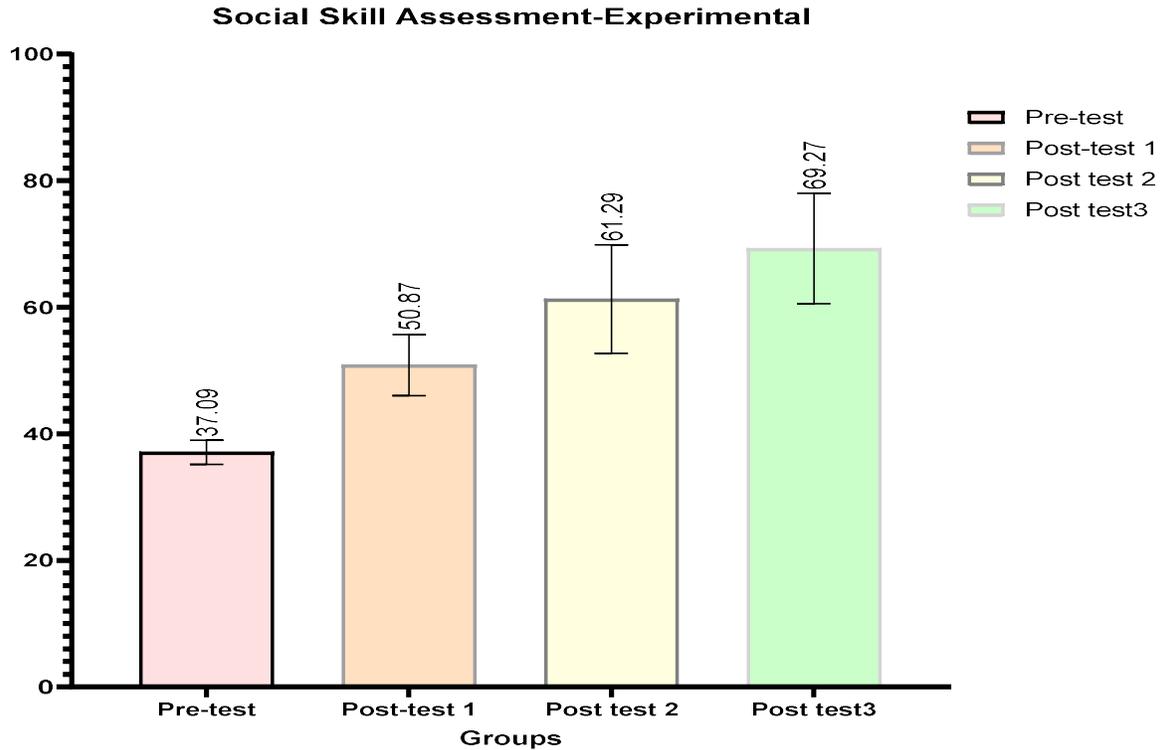


Figure: 1 Social skill among children with specific learning disabilities on Experimental

In the experimental group of children with specific learning disabilities, a significant improvement in social skills was observed over the course of the study. Initially, 100% of the participants were classified as having low social skills in the pretest. However, by the third month (Post Test 1), 31% of the participants had moved to the "Good" social skills category. This percentage further increased to 81% by the sixth month (Post Test 2), and by the ninth month (Post Test 3), 89% of the participants were classified as having good social skills. The mean social skills score significantly increased from 37.09 ± 1.90 in the pretest to 69.27 ± 8.75 by the ninth month. The chi-square test indicated a highly significant difference in the distribution of social skills across the different time points ($\chi^2=213.7$, $df=3$, $P < 0.0001$), confirming the effectiveness of the intervention in improving social skills among the children. The P-value across all post-tests was <0.0001 , indicating that the observed improvements were statistically significant.

Table: 2 Assessment of social skills among children with specific learning disabilities on the Control group

CONTROL GROUP Social skill	PRETEST		POST TEST						χ^2 and df	P value
			Post test 1 (3rd month)		Post test 2 (6th month)		Post test 3 (9th month)			
	N	%	N	%	N	%	N	%	38.33,	>0.9999

Low	100	100	100	100	100	100	100	100	297	NS
Good	0	0	0	0	0	0	0	0		
Total	100		100		100		100			
Mean+Standard deviation	36.58±2.68		37.45±3.076		40.02±3.513		42.19±3.08			
P value			0.1372		0.0001		0.0001			

Social Skill Assessment-Control Group

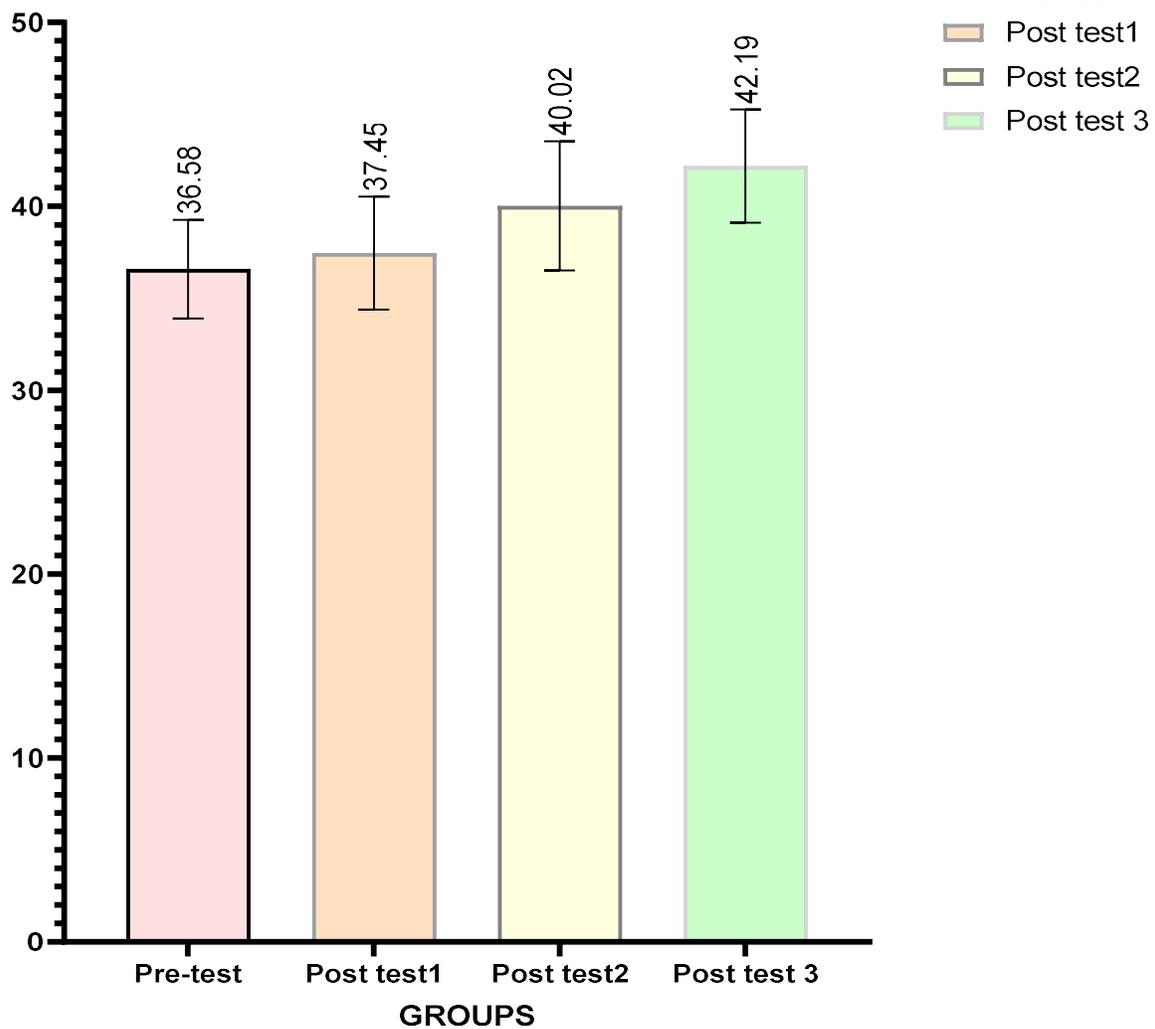


Figure: 2 Social skill among children with specific learning disabilities on Control

In the control group, there was no significant improvement in social skills among children with specific learning disabilities. All participants (100%) remained in the "Low" social skills category throughout the study, from the pretest through the ninth month. The mean social skills score showed only a slight increase from 36.58±2.68 (pretest) to 42.19±3.08 (ninth month). The chi-square test indicated no statistically significant change ($\chi^2=38.33$, $P > 0.9999$), suggesting that the intervention had no effect on improving social skills in the control group.

Table: 3 Assessment of the core academic achievements among children with specific learning disabilities on Experimental group

Experimental group Core academic assessment	PRETEST		POST TEST						χ^2 and df	P value
			Post test 1 (3rd month)		Post test 2 (6th month)		Post test 3 (9th month)			
	N	%	N	%	N	%	N	%		
Low	100	100	84	84	68	68	42	42	97.82, 6	0.0001
Good	0	0	16	16	29	29	49	49		
Very Good	0	0	0	0	3	3	9	9		
Excellent	0	0	0	0	0	0	0	0		
Total	100		100		100		100			
Mean+Standard deviation	32.01±1.267		39.03±5.967		46.19±13.87		56.97±17.21			
P value			0.1680		0.0001		0.0001			

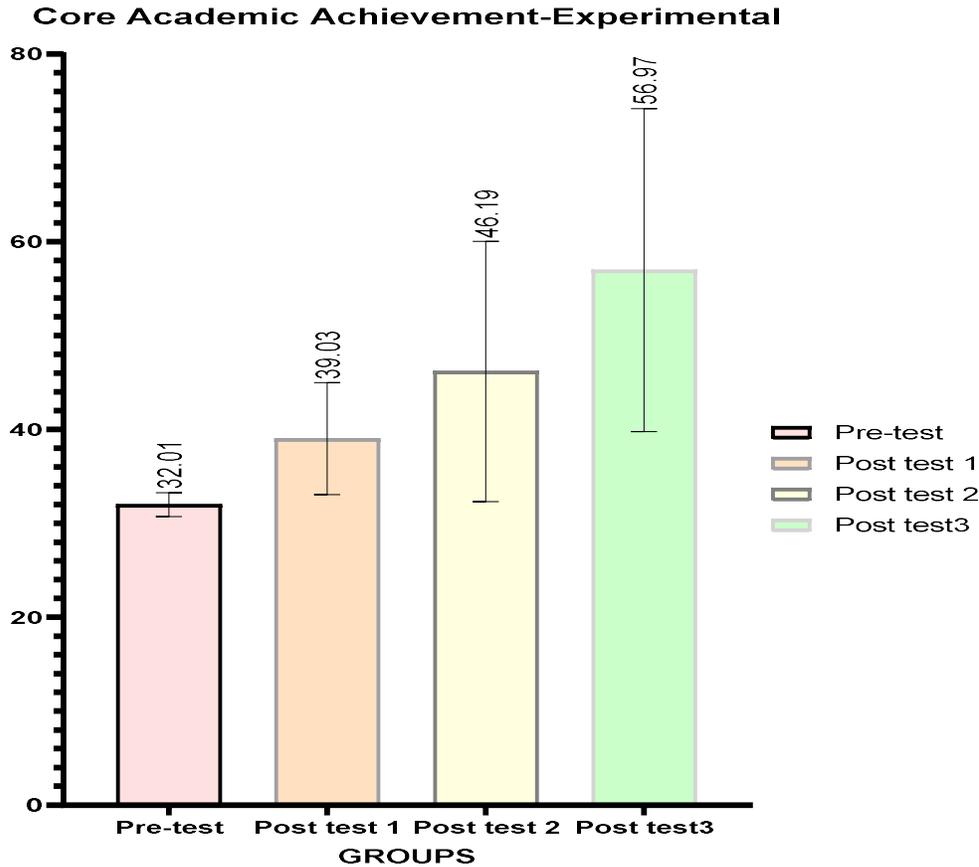


Figure:3 Core academic achievements among children with specific learning disabilities on Experimental

In the experimental group, significant improvements in core academic achievements were observed over time. Initially, 100% of children were in the "Low" category. By the ninth month, this decreased to 42%, with 49% moving to "Good" and 9% to "Very Good." The mean score increased from 32.01±1.267 (pretest) to 56.97±17.21 (ninth month), with all improvements being statistically significant (P = 0.0001).

Table: 4 Assessment of the core academic achievements among children with specific learning disabilities on Control group

CONTROL GROUP Core academic assessment	PRETEST		POST TEST						χ ² and df	P value
			Post test 1 (3rd month)		Post test 2 (6th month)		Post test 3 (9th month)			
	N	%	N	%	N	%	N	%	24.7, 3	<0.0001
Low	100	100	100	100	92	92	87	87		

Good	0	0	0	0	8	8	13	13		
VeryGood	0	0	0	0	0	0	0	0		
Excellent	0	0	0	0	0	0	0	0		
Total	100		100		100		100			
Mean+Standard deviation	32.01±1.418		33.39±2.155		34.34±5.675***		36.87±4.603***			
P value			0.0594		0.0001		0.0001			

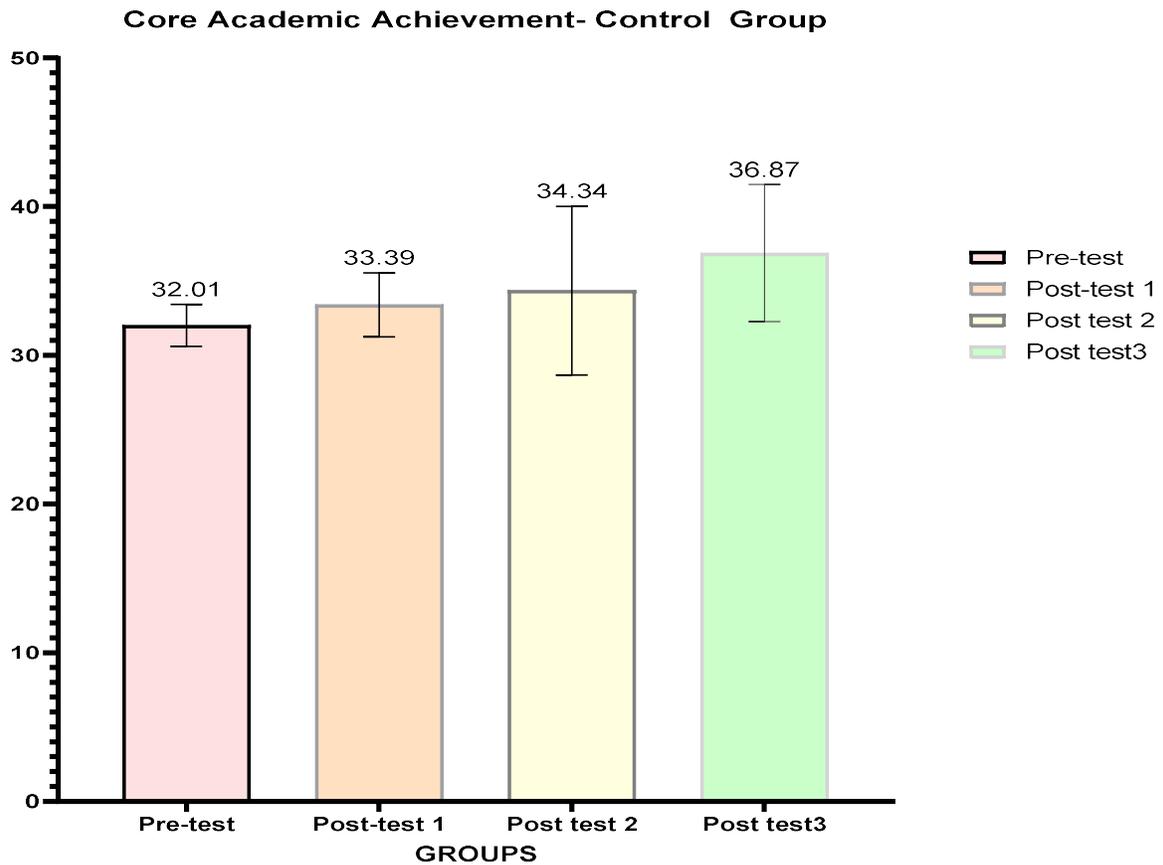


Figure: 4 Core academic achievements among children with specific learning disabilities on Control

In the control group, only slight improvements in core academic achievements were observed. Initially, all 100% of children were in the "Low" category. By the ninth month, 87% remained in the "Low" category, and only 13% moved to the "Good" category. The mean score increased modestly from 32.01±1.418 (pretest) to

36.87±4.603 (ninth month). Despite these changes, the overall improvement was limited, though statistically significant ($P < 0.0001$).

Table: 5 Co-relation between the social skills and core academic achievements among the children with SLD

Parameter	Test	Group	Mean	Standard deviation	Mean difference	t-value	Df	pValue
Social skill	Pre test	Experimental group	37.09	1.90	0.5100	0.695	792	0.9307
		Control group	36.58	2.68				
	Post test-1 (3rd month)	Experimental group	50.87	4.82	13.42	18.30	792	<0.0001
		Control group	37.45	3.076				
	Post test-2 (6th month)	Experimental group	61.29	8.56	21.27	29	792	<0.0001
		Control group	40.02	3.513				
	Post test-3 (9th month)	Experimental group	69.27	8.75	27.08	36.92	792	<0.0001
		Control group	42.19	3.08				
Core academic achievements	Pre test	Experimental group	32.01	1.267	0	0	792	>0.999
		Control group	32.01	1.418				
	Post test-1 (3rd month)	Experimental group	39.03	5.967	5.640	4.66	792	<0.0001
		Control group	33.39	2.155				
	Post test-2	Experimental group	46.19	13.87	11.85	9.79	792	<0.0001

	(6th month)	Control group	34.34	5.675				
	Post test-3 (9th month)	Experimental group	56.97	17.21	20.10	16.61	792	<0.0001
		Control group	36.87	4.603				

Social Skill Comparison

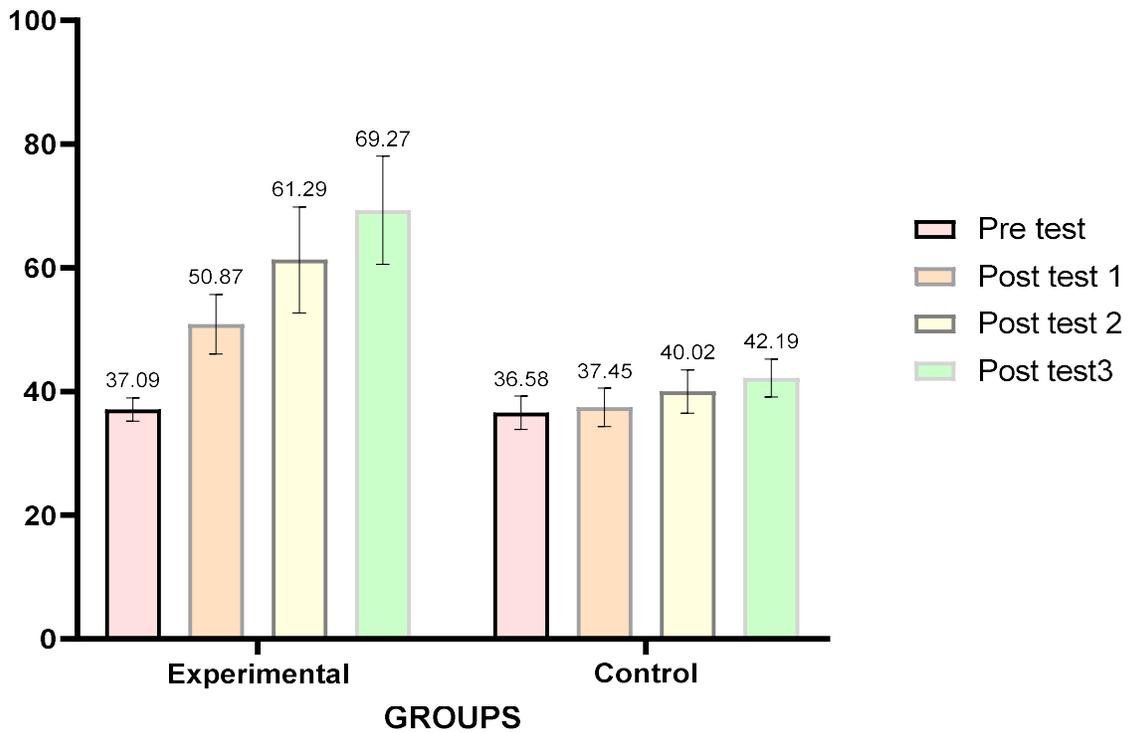


Figure: 5 Co-relation between the social skills among experimental and control.

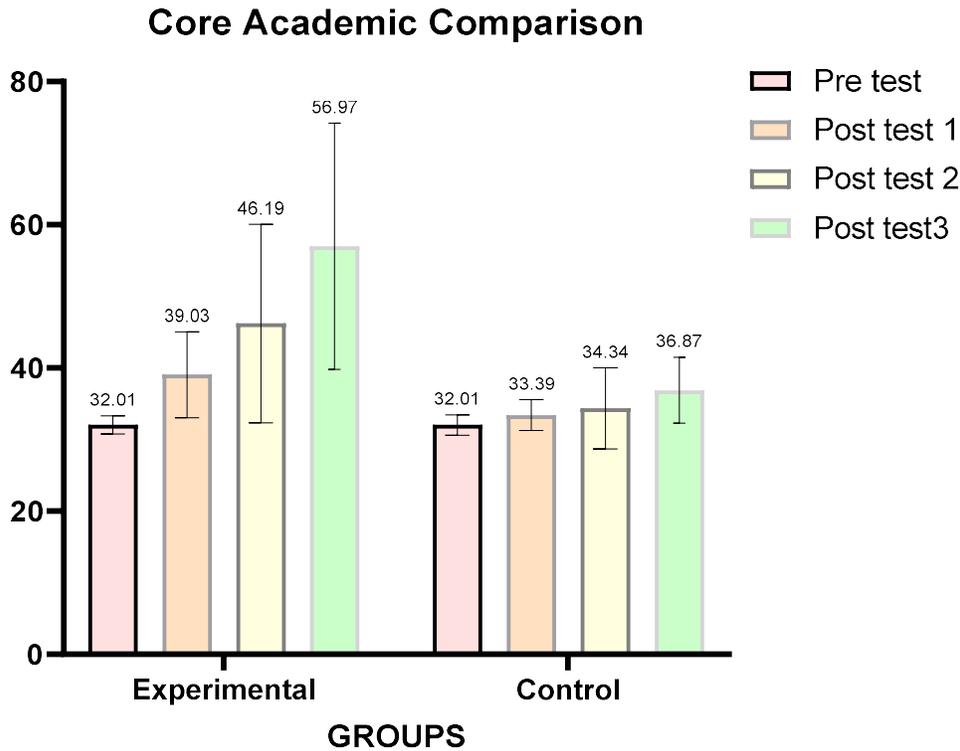


Figure:6 Co-relation between the Core Academic achievement among experimental and control

The correlation between social skills and core academic achievements among children with specific learning disabilities (SLD) shows significant differences between the experimental and control groups.

Social Skills: The experimental group showed a substantial improvement in social skills over time, with significant mean differences compared to the control group at each post-test interval. By the ninth month, the experimental group had a mean score of 69.27 ± 8.75 , significantly higher than the control group's 42.19 ± 3.08 ($P < 0.0001$).

Core Academic Achievements: Similarly, the experimental group exhibited significant gains in academic achievements, with a mean score of 56.97 ± 17.21 by the ninth month, compared to the control group's 36.87 ± 4.603 ($P < 0.0001$).

These results indicate a strong correlation between improved social skills and enhanced academic performance in the experimental group, suggesting that the interventions were highly effective.

DISCUSSION

Social skill among children with specific learning disabilities on Experimental and Control groups

The study's findings demonstrate a significant improvement in social skills among children with specific learning disabilities (SLD) who participated in the experimental group. The progression observed, from 100%

of participants being classified as having low social skills in the pretest to 89% being categorized as having good social skills by the ninth month, underscores the effectiveness of the intervention. The increase in the mean social skills score from 37.09 ± 1.90 to 69.27 ± 8.75 further supports this conclusion, with statistical analyses ($\chi^2=213.7$, $df=3$, $P < 0.0001$) indicating that these improvements are both substantial and significant. These findings align with previous research that highlights the importance of early intervention in improving social outcomes for children with SLD. For instance, a study emphasized that deficits in social skills are a significant challenge for students with learning disabilities, affecting both their social integration and academic achievement. Early and targeted interventions have been shown to mitigate these deficits, leading to improved social competence and peer relationships [6]. Moreover, the study corroborates these results, indicating that social skills training can lead to higher peer acceptance rates and better social adjustment among children with learning disabilities. Their research supports the notion that structured social skills interventions are essential in addressing the social challenges faced by these children [13]. The improvement in social skills observed in this study also reflects findings from more recent research, such as the study, which evaluated the effectiveness of the Better Emotional and Social Times (B.E.S.T.) program. This program similarly demonstrated significant gains in social skills, self-esteem, and emotional regulation, reinforcing the importance of early, structured interventions in supporting children with SLD [14]. Additionally, a study showed on the development of social and academic skills through educational interventions found that targeted programs can significantly enhance both social and academic outcomes in children with learning disabilities. This study's results are consistent with study findings, suggesting that such interventions are critical in helping children with SLD overcome their social challenges [15].

The findings from the control group indicate that there was no significant improvement in social skills among children with specific learning disabilities (SLD) over the course of the study. Despite a slight increase in the mean social skills score from 36.58 ± 2.68 (pretest) to 42.19 ± 3.08 (ninth month), all participants remained in the "Low" social skills category throughout the study. The statistical analysis ($\chi^2=38.33$, $P > 0.9999$) confirmed that these changes were not significant, suggesting that the intervention applied to the control group was ineffective in improving social skills.

This outcome aligns with the findings of several previous studies that have shown that without targeted interventions, children with SLD are unlikely to experience significant improvements in their social skills. For instance, the research highlighted that social skill deficits in children with learning disabilities are pervasive and persistent without proper intervention. They emphasized that these deficits are not only widespread but also resistant to change without specific, focused strategies designed to address them [6].

Moreover, a study similarly found that children with learning disabilities often struggle with social competence and that these challenges do not typically resolve on their own. The lack of improvement in the control group observed in this study is consistent with their findings, which underscore the need for structured social skills training programs to foster meaningful improvements in this area [16].

Furthermore, the work supports these results by indicating that children with learning disabilities often require explicit instruction in social skills to make any measurable progress. Their study showed that general educational settings or non-specific interventions are usually insufficient to address the complex social deficits faced by these children [17].

The minimal improvement in social skills observed in the control group in this study mirrors the findings of

previous research, such as the study, which found that students with SLD who did not receive targeted interventions showed little to no progress in social competence. This lack of progress highlights the importance of implementing specialized programs to address the unique needs of these students [18]. The lack of significant improvement in social skills among the control group participants underscores the necessity of targeted interventions for children with specific learning disabilities. These findings are consistent with the broader body of literature, which suggests that without specific, structured interventions, children with SLD are unlikely to develop the social skills they need to succeed in both academic and social contexts. This study reinforces the critical role that early and focused interventions play in addressing the social deficits associated with learning disabilities.

Core academic achievements among children with specific learning disabilities on Experimental and control groups

The results from the experimental group demonstrate significant improvements in core academic achievements among children with specific learning disabilities (SLD) over the course of the study. Initially, all children were classified in the "Low" category, but by the ninth month, a substantial shift was observed: 42% remained in the "Low" category, 49% had moved to the "Good" category, and 9% had achieved the "Very Good" category. The mean score increased markedly from 32.01 ± 1.267 in the pretest to 56.97 ± 17.21 by the ninth month, with these improvements being statistically significant ($P < 0.0001$). These findings align closely with previous research indicating that early and targeted interventions are crucial for enhancing academic performance in children with SLD. For instance, a study highlights the effectiveness of tailored instructional strategies in improving academic outcomes for students with learning disabilities. Their meta-analysis found that interventions focusing on specific academic skills led to significant improvements in performance, similar to the results observed in this study [19]. Additionally, the work of supports the notion that structured interventions, particularly those incorporating elements of direct instruction and repeated practice, can lead to meaningful gains in academic achievement for students with SLD. Their research emphasized the importance of consistent, targeted support, which aligns with the significant progress noted in the experimental group of this study [12]. The observed improvements also resonate with findings from a study underscored the effectiveness of mnemonic strategies and explicit teaching methods in enhancing academic performance among students with learning disabilities. These methods, which often include repetitive and structured learning experiences, have been shown to significantly improve retention and understanding of academic content, paralleling the outcomes seen in the current study [20]. Furthermore, the significant increase in academic achievement in the experimental group is consistent with the findings, who demonstrated that students with learning disabilities benefit greatly from interventions that are both intensive and sustained over time. Their study showed that when students receive continuous support tailored to their specific learning needs, their academic performance improves significantly, as evidenced by the shift from "Low" to "Good" and "Very Good" categories in this study [7]. The findings from this study indicate a strong correlation between the improvement in social skills and enhanced academic performance among children with specific learning disabilities (SLD) in the experimental group. The experimental group demonstrated substantial improvements in both social skills and core academic achievements, significantly outperforming the control group. By the ninth month, the experimental group achieved a mean social skills score of 69.27 ± 8.75 , compared to the control group's 42.19 ± 3.08 . Similarly, the mean academic achievement score in the experimental group was 56.97 ± 17.21 , markedly higher than the control group's 36.87 ± 4.603 , with all differences being statistically significant ($P < 0.0001$).

The observed correlation between social skills and academic performance is consistent with existing literature that emphasizes the interconnectedness of social competence and academic success in children with learning disabilities.

COMPARISON WITH PREVIOUS STUDIES

A study highlighted that social skills are crucial for academic performance because they enable students to engage more effectively in classroom activities, interact positively with peers and teachers, and navigate the school environment more successfully [21]. The significant improvements in both social and academic outcomes in the experimental group underscore the importance of addressing social skills as part of academic interventions. Moreover, study provided a meta-analysis that reinforced the notion that deficits in social skills can adversely impact academic achievement. Their research demonstrated that children with learning disabilities often struggle with peer relationships and classroom engagement, which are critical components of academic success. The findings from this study align with their conclusions, suggesting that interventions targeting social skills can have a profound impact on academic outcomes [6]. Further support for the relationship between social skills and academic performance comes from the work, who found that students with better-developed social skills tend to have higher academic achievements. Their research indicated that social competence facilitates better classroom behavior, increased participation in learning activities, and improved peer relationships, all of which contribute to academic success. The significant gains observed in the experimental group in this study are consistent with these findings, highlighting the effectiveness of the interventions used [7].

Additionally, the results echo the findings, who emphasized that interventions combining social and academic skills training are particularly effective for students with learning disabilities. They noted that addressing both areas concurrently can lead to more comprehensive improvements in students' overall school performance, as seen in the experimental group of this study [12]. The strong correlation between improved social skills and enhanced academic performance observed in the experimental group underscores the effectiveness of the interventions employed. These findings are supported by a robust body of literature, which highlights the critical role of social competence in academic success among children with learning disabilities. The results suggest that comprehensive interventions addressing both social and academic skills are essential for helping students with SLD achieve their full potential.

CONCLUSION

The findings from this study provide compelling evidence that early and targeted interventions can significantly improve both social skills and academic achievements in children with specific learning disabilities (SLD). In the experimental group, participants demonstrated substantial and statistically significant gains in both areas, contrasting sharply with the control group, where improvements were minimal. The strong correlation observed between enhanced social skills and academic performance suggests that addressing social competence is integral to the academic success of children with SLD. These results are consistent with existing literature, which emphasizes the importance of comprehensive, structured interventions that simultaneously target social and academic skills. By improving social skills, children with SLD are better equipped to engage in classroom activities, form positive peer relationships, and navigate the school environment effectively, all of which contribute to improved academic outcomes. In summary, the study underscores the critical need for early, focused interventions that address both the social and academic challenges faced by children with SLD. Such

interventions are essential not only for fostering academic success but also for promoting overall social adjustment and well-being, ultimately helping these children reach their full potential.

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