

# IMPACT OF EARLY INTERVENTIONAL TECHNIQUES ON CHILDREN WITH SLD IN SOCIAL SKILLS AND ACADEMIC ACHIEVEMENTS

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## Abstract

**Objective:** The primary objective of this study is to assess the improvement in social skills and core academic achievement of children with Specific Learning Disabilities (SLDs) after early intervention techniques. **Introduction:** Among Indian schoolchildren, specific learning disabilities are common, and are often unnoticed. There are a variety of challenges associated with SLD when it comes to processing language, including difficulties with understanding, speaking, reading, writing, spelling, and math. In order to meet the needs of diverse students, educational systems must adopt a comprehensive approach. **Methods:** By using a purposive sampling technique, 200 participants were equally divided into control and experimental groups. In this study, to assess the social skills we used a tool developed by Dr. Ganesh to measure students' academic skills, behavioral issues, and social skills for students with dyslexia. In order to assess the core academic achievements of individuals with learning disabilities, the NIMHANS assessment for Specific Learning Disabilities (SLD) is used. **Results:** During the intervention, an assessment of social skills and core academic achievement aimed to distinguish between children with learning disabilities. In the pre-test, the experimental group exhibited a social skills score of  $50.58 \pm 4.69$ , surpassing the control group's score of  $36.58 \pm 2.68$ . Following the intervention, the experimental group's mean scores showed significant improvement ( $50.87 \pm 4.82$ ,  $54.34 \pm 5.18$ , and  $63.73 \pm 7.24$ ). In the pretest, the experimental group achieved a mean base academic score of  $32.01 \pm 1.267$ , while the control group's mean score was  $31.01 \pm 1.418$ . Post-intervention, the experimental group's mean scores increased to  $36.27 \pm 5.303$ ,  $42.1 \pm 12.63$ , and  $51.33 \pm 16.07$ , with the control group's scores rising to  $33.39 \pm 2.155$ ,  $37.8 \pm 5.529$ , and  $40.17 \pm 7.53$ . In independent t-tests, the experimental group significantly improved on post-tests 1, 2, and 3 of core academic achievements, highlighting the impact of social skills and academic achievements. **Conclusion:** Early intervention significantly improved academic achievement in children with learning disabilities, leading to enhanced social skills. The correlation between improved academics and better social skills highlights their interconnected nature.

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

## INTRODUCTION

SLDs include a wide range of conditions characterized by problems processing language, both on the spoken and written sides. A variety of difficulties that can occur, such as difficulty understanding language, speaking, reading, and writing, spelling, or calculating. A wide range of SLDs, such as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia, and developmental aphasia.<sup>1</sup> School-going children in India are highly prone to specific learning disabilities (SLD), which often remain imperceptible to them. Several studies report prevalence rates ranging from 5% to 17%, emphasizing its substantial impact on education. A variety of challenges accompany this condition, including difficulties processing spoken and written language, affecting comprehension, speaking, reading, writing, spelling, and mathematical calculations. While SLDs are prevalent, they are commonly overlooked. As a result, increased awareness and targeted interventions are necessary to support affected students.<sup>2</sup> In

recognition of the inherent uniqueness of each individual, special education should be tailored and implemented to meet their individual needs. An inclusive environment that upholds the principles of equity and fairness must support individual strengths, challenges, and learning styles in special education. Educational systems can serve a broader range of student needs by adopting this comprehensive perspective, facilitating more inclusive and accessible learning experiences. The prevalence of specific learning disabilities (SLDs) in the sampled children was determined at 15.17%.<sup>3</sup> Study results indicated specific percentages for different types of SLDs, including 12.5% suffering from dysgraphia, 11.2% suffering from dyslexia, and 10.5% suffering from dyscalculia. To improve the identification process, reduce the need for expensive investigations, and optimize the screening process, the research employed simplified screening methods and tools. The findings underscore the need for additional prevalence studies in the Indian context to better understand SLD prevalence and nuances. In addition, it

stressed the importance of implementing remedial education and policy interventions in mainstream education.<sup>4</sup> SLDs cannot be effectively managed without these interventions. In order to ensure academic success for all children, the education system needs to address these challenges. Several children face learning obstacles that prevent them from achieving their academic potential and benefiting fully from education. As a result of this cluster of disorders, learning disabilities are often blamed for causing these challenges. In addition to being misunderstood, mislabeled, and misperceived as incompetent, children with SLD are frequently labeled as incompetent. It is common for SLD to go undiagnosed, as a result concerned parents and teachers are more inclined to place blame on the child, causing anxiety for them and their child. SLD children are often stigmatized and disliked compared to their peers who do not have the disorder. Up to 30% of children with SLD have comorbid behavioral and emotional disorders.<sup>5</sup> Consequently, these children are likely to experience diminished positive emotions and well-being, emphasizing the need for emotional development. The sociometric profile of these students typically puts them at the bottom of their class or close to it.<sup>6,7</sup> Learning disabled students often suffer from loneliness as a result of the social challenges that come along with their learning disorders. Particularly teens experience feelings of loneliness during this period when they are forming their identities and evaluating themselves for the first time, making them more susceptible to feelings of loneliness that are negative in nature.<sup>8-11</sup> The interventions aim to improve the social well-being not only of children with SLD, but also of children facing other challenges, such as those with slow learning conditions, intellectual disabilities, psychological disorders, and personality disorders.<sup>12</sup>

## Methodology

**Study Objective:** The principal aim of this study is to evaluate the social skills and academic performance of children with specific learning disabilities (SLDs).

**Sampling technique:** As part of this study, the experimental and control groups were selected using simple random technique for screening specific learning disabilities and purposive sampling technique for experimental and control groups.

### Selection criteria

#### Inclusion criteria

1. Children from III to VIII standard
2. Children of parents giving consent
3. SLD categories of - Dyslexia, Dysgraphia, and Dyscalculia.
4. A child's informed consent is provided by their parent(s) or guardian(s)

#### Exclusion criteria

1. SLD with the other co morbidities and physically challenged children.
2. Intellectually challenged, ADHD, Autism.
3. Children of parents who is not giving consent.

## Study Sample

This study involved 200 participants who were evenly distributed between two groups. The Experimental group consisted of 100 participants. The control group consisted of 100 participants as well. Consequently, a balanced distribution ensured that the effectiveness of the intervention was evaluated fairly.

## Site of the Study

The study encompassed ten schools, equally divided into five schools for the control group and five for the experimental group. School selection was meticulously undertaken to ensure a diverse and representative sample for the research. The PRASHAST-Disability Screening Checklist for the school tool was employed in the screening process. PRASHAST Part I and II aims to screen and tentatively categorize existing disability conditions as per the disabilities recognized by the RPwD Act, 2016, facilitating further identification and certification. This tool is a comprehensive and validated instrument for identifying students with specific learning disabilities (SLDs). After the initial screening, the confirmation of SLD was conducted by teacher-stool from the National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD). This multi-step approach was designed to enhance the accuracy and reliability of the SLD identification process.

## Tool Description

### Early Intervention Techniques

The early remedial treatment for identified children with Specific Learning Disabilities (SLD) focuses on improving core academic skills through various techniques. These include Phonetics-Letter Sound Association, Orton-Gillingham-Multi Sensory Techniques, Flash Card Drill, Repeated Oral Reading (ROR) technique, Paired Reading, Syllable Division, Chunking Text, and Strategies for Sentence Writing. Reading is assessed through Word/Minute tests, maintaining a graph chart for the reading program. Spelling and comprehension are addressed using Curriculum-Based Management (CBM) training. Reading fluency is enhanced through Repeated Oral Reading (ROR), and attention and eye coordination are improved through a specific program (BT - Improve). These targeted interventions aim to address specific challenges and promote overall academic development in children with SLD.

### Social Skills Assessment

We used the tool developed by Dr. Ganesh used in his study "Academic skills, behaviour problems and social skills of children with dyslexia" for assessing students with specific learning disabilities' social skills in this study in order to assess the social skills of students with SLD. This tool contains 28 questionnaires, 14 of which are positive and 14 of which are negative. A positive score is assigned based on a Likert scale of 1 to 4, with never being the lowest. The scoring mechanism is reversed for negative questions. These questions have a positive score of 1, 2, 6, 8, 9, 10, 11, 12, 16, 17, 21, 22, 24, 25, and 26, while they have a negative score of 3, 4, 5, 7, 13, 14, 15, 18, 19, 20, 23, 27, and 28.<sup>13</sup>

### Core Academic Achievement Assessment

Individuals with learning difficulties can evaluate their core academic achievements by using the NIMHANS assessment for Specific Learning Disabilities (SLD). A systematic procedure is followed to determine the reliability and validity of NIMHANS, a tool designed to identify specific learning disabilities. A diverse sample was administered the tool to determine internal consistency reliability, using statistical measures like Cronbach's alpha. It is necessary to compare the NIMHANS scores with established academic measures in order to establish concurrent validity. NIMHANS' comprehensive approach reinforces its reliability and validity in identifying SLD in clinical and educational settings.<sup>14</sup>

Results

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

Experimental Group Social skill	PRETEST		POST TEST						$\chi^2$ and df	P value
			3 <sup>rd</sup> month		6 <sup>th</sup> month		9 <sup>th</sup> month			
	N	%	N	%	N	%	N	%		
Low	100	100	69	69%	19	19%	11	11%	$\chi^2=213.7$ df=3	0.0001 HS
Good	0	0	31	31%	81	81%	89	89%		
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>		<b>100</b>		<b>100</b>			
<b>Mean+Standard deviation</b>	<b>37.09±1.90</b>		<b>50.87±4.82</b>		<b>54.34±5.18</b>		<b>63.73±7.24</b>			
<b>P value</b>			<b>0.0001</b>		<b>0.0001</b>		<b>0.0001</b>			

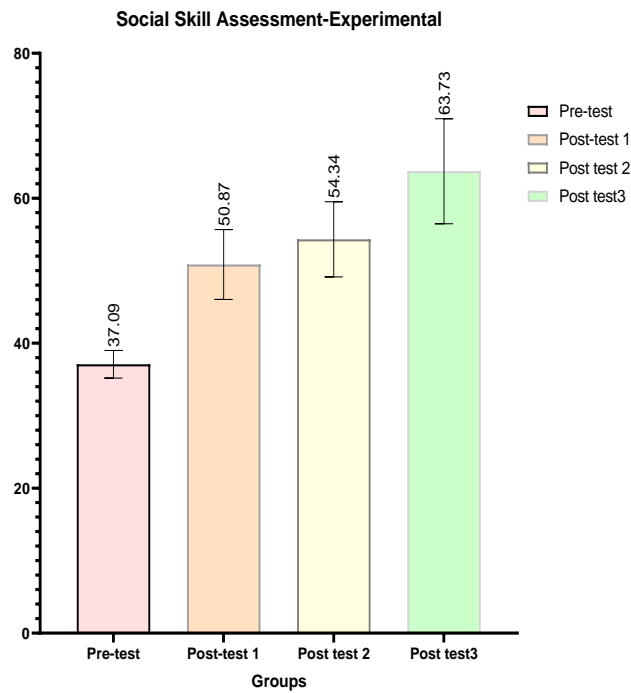


Figure: 1 Social skill among children with specific learning disabilities on Experimental

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

CONTROL GROUP Social skill	PRETEST		POST TEST						$\chi^2$ and df	P value
			3 <sup>rd</sup> month		6 <sup>th</sup> month		9 <sup>th</sup> month			
	N	%	N	%	N	%	N	%		
Low	100	100	100	100	100	100	100	100	38.33, 297	>0.9999 NS
Good	0	0	0	0	0	0	0	0		
<b>Total</b>	<b>100</b>		<b>100</b>		<b>100</b>		<b>100</b>			
<b>Mean+Standard deviation</b>	<b>36.58±2.68</b>		<b>37.45±3.076</b>		<b>40.02±3.513</b>		<b>42.19±3.08</b>			
<b>P value</b>			<b>0.1372</b>		<b>0.0001</b>		<b>0.0001</b>			

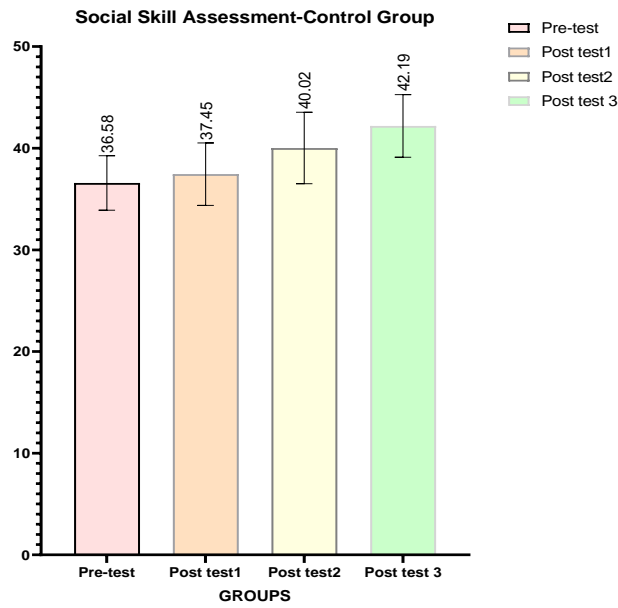


Figure: 2 Social skill among children with specific learning disabilities on Control

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						$\chi^2$ and df	P value
			3 <sup>rd</sup> month		6 <sup>th</sup> month		9 <sup>th</sup> 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		
<b>Total</b>	<b>100</b>		<b>100</b>		<b>100</b>		<b>100</b>			
<b>Mean+Standard deviation</b>	<b>32.01±1.267</b>		<b>36.27±5.303</b>		<b>42.10±12.634</b>		<b>51.33±16.074</b>			
<b>P value</b>			<b>0.0275</b>		<b>0.0001</b>		<b>0.0001</b>			

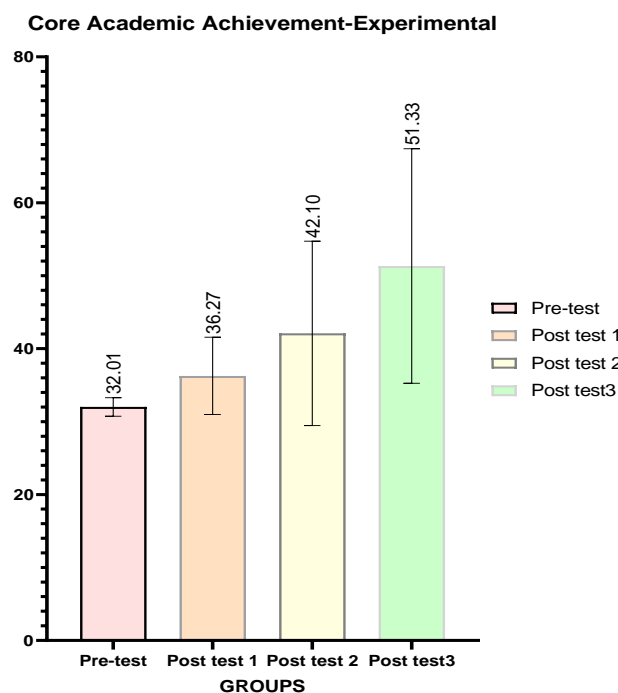


Figure:3Core academic achievements among children with specific learning disabilities on Experimental

**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						$\chi^2$ and df	P value
	N	%	3 <sup>rd</sup> month		6 <sup>th</sup> month		9 <sup>th</sup> month			
			N	%	N	%	N	%		
Low	100	100	100	100	82	82	80	80	<b>113.9, 297</b>	0.9999
Good	0	0	0	0	18	180	20	20		
VeryGood	0	0	0	0	0	0	0	0		
Excellent	0	0	0	0	0	0	0	0		
<b>Total</b>	<b>100</b>		<b>100</b>		<b>100</b>		<b>100</b>			
<b>Mean+Standard deviation</b>	<b>31.01±1.418</b>		<b>33.39±2.155</b>		<b>37.8±5.529***</b>		<b>40.17±7.53***</b>			
<b>P value</b>			<b>0.0029</b>		<b>0.0001</b>		<b>0.0001</b>			

**Core Academic Achievement- Control Group**

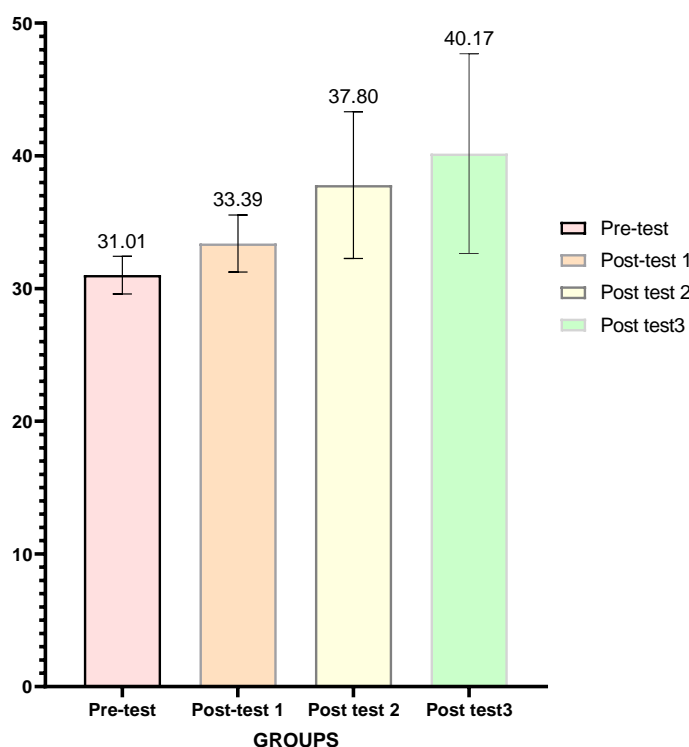


Figure: 4 Core academic achievements among children with specific learning disabilities on Control

**Table: 5 Relationship between the social skills and core academic achievements among the children with SLD**

Parameter	Test	Group	Mean	Standard deviation	Mean difference	t-value	Df	P Value
Social skill	Pre test	Experimental group	<b>50.58</b>	<b>4.69</b>	14	21.93	792	0.0001 HS
		Control group	<b>36.58</b>	<b>2.68</b>				
	Post test-1	Experimental group	<b>50.87</b>	<b>4.82</b>	13.42	21.03	792	0.0001 HS
		Control group	<b>37.45</b>	<b>3.076</b>				
	Post test-2	Experimental group	<b>54.34</b>	<b>5.18</b>	14.32	22.44	792	0.0001 HS
		Control group	<b>40.02</b>	<b>3.513</b>				
	Post test-3	Experimental group	<b>63.73</b>	<b>7.24</b>	21.54	33.75	792	0.0001 HS
		Control group	<b>42.19</b>	<b>3.08</b>				
	Pre test	Experimental group	<b>32.01</b>	<b>1.267</b>	1	0.859	792	0.8618 NS
		Control group	<b>31.01</b>	<b>1.418</b>				

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Core academic achievements	Post test-1	Experimental group	36.27	5.303	2.88	2.475	792	0.0530
		Control group	33.39	2.155				
	Post test-2	Experimental group	42.1	12.63	4.3	3.696	792	0.0009 S
		Control group	37.8	5.529				
	Post test-3	Experimental group	51.33	16.07	11.16	9.592	792	0.0001 HS
		Control group	40.17	7.53				

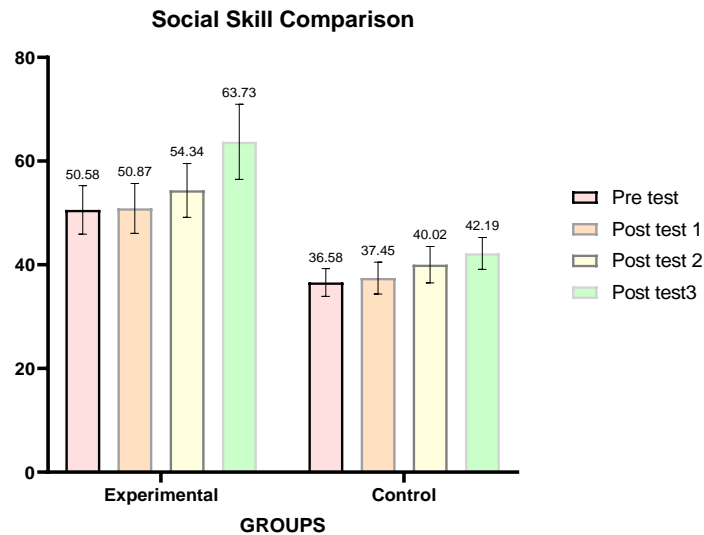


Figure: 5 Relationship between the social skills among experimental and control

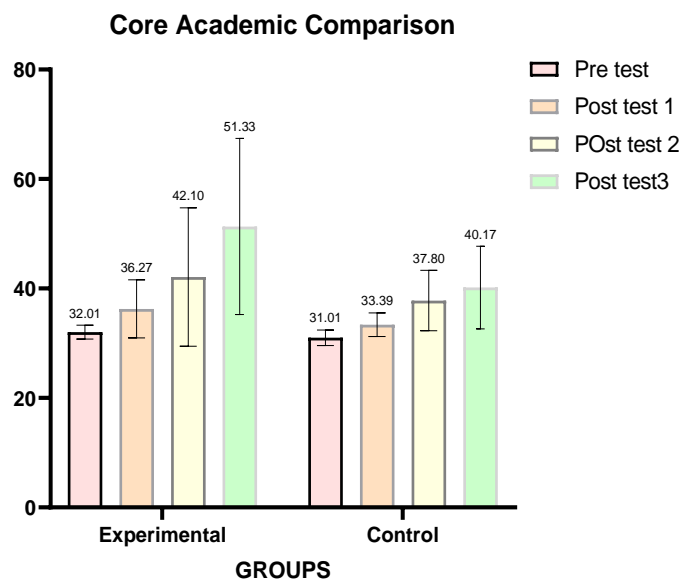


Figure:6 Relationship between the Core Academic achievement among experimental and control

## Discussion

In order to evaluate the efficacy of early interventional techniques in improving social skills and academic performance in children with specific learning disabilities (SLD), experimental and control groups were compared.

### Social Skills assessment

In the initial assessment (pretest), the experimental group exhibited a mean social skills score of  $50.58 \pm 4.69$ , contrasting with the control group's mean score of  $36.58 \pm 2.68$ . Statistically significant differences were observed between the two groups concerning their social skills before the intervention, as

indicated by an independent 't' test. Consequently, there were notable distinctions in the social skills of children with specific learning disabilities (SLD) between the groups initially. Upon implementing the intervention, marked improvements were observed in the experimental group's mean scores in the post-test phases ( $50.87 \pm 4.82$ ,  $54.34 \pm 5.18$ , and  $63.73 \pm 7.24$ ). The independent 't' test conducted on the post-test data revealed statistically significant differences in the social skills of the two groups after the intervention. Therefore, it can be concluded that children with SLD in the experimental group experienced

significant enhancement in their social skills following early intervention.

### Core Academic Achievements

In the pretest, the experimental group displayed a mean core academic achievement score of  $32.01 \pm 1.267$ . In contrast, the control group had a mean score of  $31.01 \pm 1.418$ . Independent 't' tests indicated significant differences between the two groups' core academic achievements before the intervention, with the experimental group showing higher scores. Post-intervention, the experimental group's mean scores increased to  $36.27 \pm 5.303$ ,  $42.1 \pm 12.63$ , and  $51.33 \pm 16.07$ , while the control group's scores increased to  $33.39 \pm 2.155$ ,  $37.8 \pm 5.529$ , and  $40.17 \pm 7.53$ . The independent 't' test in the posttest revealed a statistically significant difference between the two groups. This suggests that early interventional techniques moderately increased the core academic achievements of the experimental group compared to the control group. The findings highlight the positive impact of early interventional techniques on the social skills of children with special needs. Additionally, these interventions slightly improved the core academic achievements of the experimental group in the posttest, emphasizing their effectiveness.

### Conclusion

Children with learning disabilities significantly improved their academic achievement after early intervention. The intervention's effectiveness was evident in the significant enhancement of academic performance among children with learning disabilities, contributing to positive outcomes in their social skills. An improvement in academic skills is correlated with an improvement in social skills, demonstrating the interconnected nature of these aspects in the development of a child. As a result of addressing core academic challenges early on, the intervention laid a foundation for broader positive impacts, both in terms of academic success and social skills among children with learning disabilities. In order to promote a more inclusive and supportive educational environment, targeted early interventions are important that take a holistic approach to addressing various dimensions of a child's development.

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