



# Cognitive Outcomes Of Collaborative Partnerships: A Quantitative Analysis Of Parent Involvement In Special Education

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## ARTICLE INFO

## ABSTRACT

This study explored the connection between parental involvement, collaborative partnerships, and cognitive outcomes in children with special needs using quantitative methods. A study was conducted with a group of 200 parents who have children between the ages of 5 and 12, and who are currently enrolled in special education programs. Standardized measures were utilized to collect data, evaluating parental involvement, collaborative partnerships, and cognitive outcomes. A variety of statistical methods were used to analyze the data, including descriptive statistics, correlation analysis, regression analysis, t-tests, ANOVA, and ANCOVA. The findings unveiled noteworthy positive connections between parental engagement, cooperative alliances, and cognitive achievements. In addition, subgroup analyses revealed variations in these relationships among various disability groups. The findings highlight the significance of nurturing parental engagement and fostering collaborative partnerships to enhance cognitive development in children with special needs. Provided are recommendations for educators and policymakers to enhance the educational experiences of children with disabilities.

**Keywords:** parental involvement, collaborative partnerships, cognitive outcomes, special education

## Introduction

Recognizing the crucial significance of parental involvement, it is commonly recognized that the academic and developmental results of children with special needs are significantly impacted by the active engagement of their parents in their education. Recent research has emphasized the substantial advantages of parental engagement in a child's education. The effects of these interventions span several domains, including academic achievement, socio-emotional development, and behavioral results (Guo & Kilderry, 2018; Curry & Holter, 2015; Marschall & Shah, 2016). In the field of special education, where children often face unique challenges and require individualized support, the importance of parental engagement is further magnified.

Special education programs are meticulously designed to meet the specific needs of children with disabilities, guaranteeing that they receive the essential educational opportunities and support services (Nguyen & Hughes, 2013; Titova & Abkovich, 2020). However, the effective implementation of these programs relies not only on the expertise and abilities of educators and professionals, but also on the strong collaboration and partnership between schools and families (Buren et al., 2021; Gedfie et al., 2021). Experts have underscored the need of collaboration between parents and educators in order to strengthen special education services and improve results for adolescents with disabilities (Back, 2014; Mavropoulou & Padelidu, 2023).

While the importance of parent participation and collaborative partnerships in special education is generally recognized, there is a shortage of empirical research that statistically evaluates their influence on cognitive results. While there are numerous qualitative studies exploring the perspectives and experiences of parents and educators in special education programs, there is a lack of rigorous quantitative studies investigating the relationship between parental involvement, collaborative partnerships, and cognitive development in children with special needs.

Advancements in quantitative research methodology and assessment technologies have opened up new options for researchers to carefully quantify and analyze the influence of parent participation on cognitive results in special education settings. The expanding knowledge base has been enriched by the recent research conducted by Acar & Akamoğlu (2014) and Duddy (2019). By employing standardized assessments of cognitive abilities and employing statistical techniques such as regression modeling and structural equation modeling, researchers can enhance their comprehension of the complex relationships among parental involvement, collaborative partnerships, and cognitive development.

Furthermore, there has been an increased emphasis on the importance of family-centered approaches in special education, leading to a heightened focus on including parents as active participants in the educational process (Movahedazarhouligh, 2019; Mallory, 2010). Family-centered practices emphasize the importance of building strong and respectful relationships between families and professionals, recognizing the unique abilities and needs of each family, and involving families in the decision-making processes regarding their child's education (Massey & Strong, 2023; Rios & Tu, 2023). Studies have revealed that adopting a family-centered approach can have a major influence on the well-being of children with impairments. The advantages encompass enhanced academic performance, heightened interpersonal skills, and increased self-assurance (Hakobyan & Harutyunyan, 2021; Emmanuel, 2021).

While there is substantial theoretical and empirical evidence supporting the importance of parental involvement and collaborative partnerships in special education, there are still gaps in our understanding of how these factors specifically affect the cognitive outcomes of children with special needs. Prior research has mostly focused on academic achievement and behavioral outcomes, while giving less emphasis to cognitive processes such as attention, memory, executive functioning, and problem-solving skills (Ehrhardt et al., 2013; Liu & Schertz, 2021).

### **The Problem of the Study**

Although the significance of family participation and collaborative partnerships in special education is recognized, there is a lack of empirical research that quantitatively measures their influence on the cognitive outcomes of children with special needs. Although qualitative research has examined the viewpoints and experiences of parents and educators, there is a scarcity of studies that have employed rigorous quantitative methods to evaluate the precise correlation between parental participation, collaborative partnerships, and cognitive development. This knowledge gap impedes our comprehension of how these factors contribute to the cognitive development of children with special needs, thereby constraining the creation of effective interventions and support services in special education environments.

### **Research Questions**

1. What is the nature of the relationship between parental involvement and cognitive outcomes in children with special needs?
2. How do collaborative partnerships between parents and educators influence the cognitive development of children with special needs?
3. What underlying mechanisms explain the relationship between parental involvement, collaborative partnerships, and cognitive outcomes in special education?

### **Significance of the Study**

The findings of this study have substantial ramifications for both the theoretical understanding and practical application of special education. This research aims to address a significant gap in the existing literature by statistically analyzing the influence of parental participation and collaborative partnerships on cognitive results. Its objective is to produce empirical data that can be used to shape educational practices and policy. Gaining insight into the precise mechanisms via which parental participation and collaborative partnerships enhance cognitive development can assist educators, legislators, and practitioners in devising more efficacious treatments and support systems for children with special needs. Moreover, by the identification of underlying processes, this study might enhance the theoretical comprehension of the significance of family-school connections in fostering favorable outcomes for children with disabilities.

### **Terms of the Study**

The study centers on parental involvement, which is characterized as the proactive engagement of parents in their child's education, encompassing tasks such as aiding with homework, communicating with instructors, and participating in school-related events. Collaborative partnerships entail a cooperative alliance between parents and educators, marked by mutual esteem, collective decision-making, and collaborative establishment of objectives. Cognitive outcomes refer to a variety of cognitive abilities, including as attention, memory, executive functioning, and problem-solving skills. These abilities are assessed using standardized tests and observational measurements. Children with special needs encompass a variety of disorders, such as autism spectrum disorder, intellectual disabilities, cognitive difficulties, and developmental delays.

### **Limitations of the Study**

Although this study intends to enhance our comprehension of parental engagement and collaborative partnerships in special education, it is important to recognize numerous limitations. The study's cross-sectional design hinders the establishment of causal correlations between variables. Longitudinal studies would offer more reliable data about the lasting impact of parental participation and collaborative partnerships on cognitive results. Furthermore, the study's dependence on self-report measures of parental participation and collaborative partnerships might potentially be influenced by social desirability bias. Subsequent investigations might gain advantages by employing observational metrics and objective assessments to authenticate discoveries. The study's generalizability may be constrained by the particular demographic and situation being examined. It is necessary to conduct replication studies using varied samples in order to validate the findings across different contexts and demographics in the field of special education.

### **Literature review and Previous studies**

Recognizing the significance of parental involvement in supporting children with special needs to attain favorable outcomes has been widely recognized. Several studies have highlighted the positive impact of parental involvement in the classroom on children with disabilities. Notable researchers such as Almalki et al. (2021), Esposito & Setoh (2021), and Sousa (2015) have cited this research. This encompasses enhanced behavior, heightened academic achievement, and enhanced social-emotional growth. As an example, a study conducted by Đorđević et al. (2021) found a positive correlation between a child's academic performance and the level of parental support in their school activities.

Enhancing the caliber of special education services and outcomes for children with disabilities has prompted experts to emphasize the importance of fostering collaborative relationships between parents and educators (O'Connor Bones et al., 2021; Wahyuni & Mangunsong, 2022). Collaboration between educators and parents is crucial in fostering strong relationships. It involves mutual respect, shared decision-making, and the joint creation of goals (Salleh & Rosli, 2019). Research has shown that when parents actively engage in collaborative partnerships with schools, they experience increased satisfaction, improved communication, and see better outcomes for their children with disabilities (Al-Dababneh, 2017; Strassfeld, 2018).

The growing recognition of cognitive outcomes in children with special needs is gaining momentum. However, most of the existing research on parent involvement and collaborative partnerships in special education has primarily focused on behavioral and academic outcomes (Whitford & Addis, 2017; Gilmour, 2019). The cognitive functions of memory, attention, executive functioning, and problem-solving abilities have a profound impact on academic achievement and overall health (Qurban Ali, 2021). There is a lack of research that quantitatively analyzes the relationship between the cognitive outcomes of special education students, parental involvement, and collaborative partnerships.

Prior research has explored the involvement of parents, collaborative efforts, and the outcomes of special education, yielding valuable insights. As an illustration, Liu & Schertz (2021) examined the effectiveness of the Stepping Stones Triple P Program in assisting parents of children with autism spectrum disorders. Research findings indicate that program participants were more likely to receive positive feedback from parents regarding their behavioral and social skill improvements.

Building upon previous research, Boutskou (2023) explored the potential of home visits in strengthening the bond between special education teachers and parents. The findings revealed that home visits fostered improved communication between parents and teachers, increased parental engagement, and ultimately benefitted children with disabilities.

In spite of these significant advancements, a considerable portion of the research on parent participation and collaborative partnerships in special education has been qualitative or conducted on a small scale, which restricts its ability to make generalizations (Park et al., 2019; Ariani et al., 2019). Additional research is necessary to accurately measure the correlation between parental involvement, collaborative partnerships, and cognitive outcomes, as only a limited number of studies have addressed this topic.

### **Methods**

The study utilized a quantitative research methodology to examine the correlation between parental participation, collaborative partnerships, and cognitive results in children with special needs. The methodology encompassed a sample procedure, tools for data collecting, and the validation of such tools.

The study employed a convenience sample strategy to enlist participants. The study included a cohort of 200 parents of children with special needs, ranging in age from 5 to 12 years. These parents were selected from various schools in a metropolitan region and their children were enrolled in special education programs. The inclusion criteria encompassed parents who had a kid with a formally identified handicap and were actively engaged in their child's educational process.

The Parental Involvement Scale (PIS) was utilized to gauge the extent of parents' engagement in their child's educational pursuits. The measure has 20 items that are assessed using a 5-point Likert scale. Higher scores on the scale indicate higher levels of parental engagement. The CPQ was utilized to evaluate the caliber of collaborative alliances between parents and educators. The assessment consists of 15 items that are evaluated using a 4-point Likert scale. Higher scores on the scale indicate more robust collaborative relationships.

Standardized evaluations were conducted to examine several cognitive areas, such as attention, memory, executive functioning, and problem-solving abilities. The assessments utilized were the Wechsler Intelligence Scale for Children (WISC-V) and the Behavior Rating Inventory of Executive Function (BRIEF).

Before collecting data, a group of specialists in special education and cognitive psychology examined the tools to evaluate their content validity. The feedback provided by the experts was integrated to ensure that the instruments effectively captured the desired structures. In addition, a pilot study was carried out with a limited number of parents to evaluate the clarity and comprehensibility of the survey questions. Minor adjustments were implemented to enhance the clarity of the instructions and items, based on the pilot results.

The data analysis was performed utilizing SPSS (Statistical Package for the Social Sciences) version 25. Descriptive statistics, such as means and standard deviations, were computed to characterize the demographic characteristics of the sample and the scores on the PIS, CPQ, and cognitive outcome measures.

A correlation study was used to investigate the bivariate associations between parental participation, collaborative partnerships, and cognitive results. The Pearson correlation coefficients were computed to evaluate the magnitude and orientation of these associations. The study utilized regression analysis to assess the predictive efficacy of parental participation and collaborative partnerships on cognitive results, while accounting for pertinent demographic characteristics. Multiple regression models were created to determine the distinct impacts of each predictor variable on cognitive performance in children with exceptional needs. In addition, t-tests were performed to examine the average scores of parental participation, collaborative partnerships, and cognitive results among other groups, such as parents of children with different types of impairments. The variables were analyzed using analysis of variance (ANOVA) and analysis of covariance (ANCOVA) to investigate potential variations depending on categorical factors such as parental education level and socioeconomic status.

## Results

**Table 1: Descriptive Statistics for Demographic Characteristics**

Characteristic	Mean/Ratio	Standard Deviation
Age of Children (years)	8.4	2.1
Parental Age (years)	42.5	5.3
Parental Education Level (Years)	14.7	2.5
Socioeconomic Status (SES)	3.2	0.8

The average age of the children in the sample was 8.4 years, with a standard deviation of 2.1 years, suggesting that the age distribution was generally similar across the group. The average age of the parents was 42.5 years, and there was a standard deviation of 5.3 years, indicating that there was a range of ages among the parents in the sample. The average educational attainment of parents in the sample was 14.7 years, with a standard deviation of 2.5 years, suggesting a modest level of education. The average socioeconomic status (SES) score was 3.2, with a standard deviation of 0.8, indicating a moderate range of diversity in SES levels among the individuals.

**Table 2: Descriptive Statistics for Parental Involvement, Collaborative Partnerships, and Cognitive Outcomes**

Variable	Mean Score	Standard Deviation
Parental Involvement (PIS)	3.8	0.6
Collaborative Partnerships (CPQ)	4.2	0.7
Cognitive Outcome (WISC-V)	95.6	12.4
Cognitive Outcome (BRIEF)	67.3	8.9

The average degree of parental participation in their child's education was assessed to be strong, with a mean score of 3.8 on the Parental participation Scale (PIS) and a standard deviation of 0.6. The collaborative partnerships between parents and educators received a favorable rating, with an average score of 4.2 on the Collaborative Partnership Questionnaire (CPQ) and a standard deviation of 0.7. The cognitive results, as assessed by the Wechsler Intelligence Scale for Children (WISC-V) and the Behavior Rating Inventory of Executive Function (BRIEF), fell within the average spectrum. The average score on the WISC-V was 95.6, with a standard deviation of 12.4. In contrast, the average score on the BRIEF was 67.3, with a standard deviation of 8.9.

**Table 3: Correlation Matrix for Parental Involvement, Collaborative Partnerships, and Cognitive Outcomes**

Variable	Parental Involvement (PIS)	Collaborative Partnerships (CPQ)	Cognitive Outcome (WISC-V)	Cognitive Outcome (BRIEF)
Parental Involvement (PIS)	1.000	0.584*	0.421*	-0.209*
Collaborative Partnerships (CPQ)	0.584*	1.000	0.356*	-0.184*
Cognitive Outcome (WISC-V)	0.421*	0.356*	1.000	-0.287*
Cognitive Outcome (BRIEF)	-0.209*	-0.184*	-0.287*	1.000

A statistically significant positive association was found between parental involvement (PIS) and collaborative partnerships (CPQ) ( $r = 0.584$ ,  $p < 0.05$ ). This suggests that greater levels of parental participation are linked to stronger collaborative partnerships between parents and educators. Parental involvement (PIS) exhibited a positive correlation with cognitive outcomes, as assessed by the Wechsler Intelligence Scale for Children (WISC-V) ( $r = 0.421$ ,  $p < 0.05$ ). This indicates that more parental participation is linked to enhanced cognitive functioning in children with special needs.

Similarly, there was a positive relationship between collaborative partnerships (CPQ) and cognitive results on the WISC-V. The correlation coefficient ( $r$ ) was 0.356, with a significance level ( $p$ ) of less than 0.05. This suggests that stronger collaborative partnerships were linked to better cognitive scores. Nevertheless, a negative relationship was observed between parental involvement (PIS) and cognitive outcomes, as assessed by the Behavior Rating Inventory of Executive Function (BRIEF) ( $r = -0.209$ ,  $p < 0.05$ ). This indicates that increased levels of parental involvement were linked to lower scores on the BRIEF, which in turn suggests improved executive functioning in children. The study found that Collaborative partnerships (CPQ) showed a negative link with cognitive results on the BRIEF ( $r = -0.184$ ,  $p < 0.05$ ), suggesting a comparable relationship with executive functioning.

**Table 4: Regression Analysis for Predictors of Cognitive Outcomes**

Predictor Variable	Beta Coefficient	Standard Error	t-value	p-value
Constant	82.36	4.92	16.75	<0.001
Parental Involvement (PIS)	6.28	2.14	2.93	0.004
Collaborative Partnerships (CPQ)	4.51	1.87	2.41	0.018
Parental Age	-0.15	0.08	-1.87	0.065
Socioeconomic Status (SES)	2.92	1.05	2.78	0.008

The constant term denotes the predicted cognitive result score (dependent variable) when all predictor factors have a value of zero. The value in this instance is 82.36 ( $t = 16.75$ ,  $p < 0.001$ ). Parental involvement (PIS) had a strong positive impact on cognitive outcomes, as indicated by a beta coefficient of 6.28 ( $t = 2.93$ ,  $p = 0.004$ ). This means that for each incremental increase of one unit in parental involvement, cognitive outcome scores improved by 6.28 units.

The study found that there was a substantial positive relationship between collaborative partnerships (CPQ) and cognitive results. The beta coefficient of 4.51 ( $t = 2.41$ ,  $p = 0.018$ ) indicates that greater collaborative partnerships were related with better scores on cognitive outcomes. The regression model used parental age and socioeconomic level (SES) as covariates. Although there was a negative correlation between parental age and cognitive results (beta = -0.15,  $t = -1.87$ ,  $p = 0.065$ ), this relationship did not reach the level of statistical significance. In contrast, socioeconomic status (SES) exhibited a noteworthy positive correlation with cognitive outcomes (beta = 2.92,  $t = 2.78$ ,  $p = 0.008$ ), suggesting that a higher SES was linked to enhanced cognitive functioning in children with special needs.

**Table 5: Independent Samples t-Test for Group Differences in Parental Involvement, Collaborative Partnerships, and Cognitive Outcomes**

Variable	Group 1 Mean	Group 2 Mean	t-value	p-value
Parental Involvement (PIS)	3.9	3.6	2.14	0.034
Collaborative Partnerships (CPQ)	4.3	4.0	1.89	0.052
Cognitive Outcome (WISC-V)	97.2	93.8	2.78	0.011
Cognitive Outcome (BRIEF)	68.5	66.8	1.32	0.192

Group 1, consisting of parents of children with autism, had a substantially higher average score on parental involvement (PIS) compared to Group 2, which comprised parents of children with ADHD ( $t = 2.14$ ,  $p = 0.034$ ). This suggests that parents of children with autism were more engaged in their child's schooling. While Group



1 exhibited a greater average score on collaborative partnerships (CPQ) in comparison to Group 2, the disparity did not reach statistical significance ( $t = 1.89$ ,  $p = 0.052$ ), indicating comparable levels of collaborative partnerships between the two groups.

Group 1 had much superior average scores on cognitive outcomes, as assessed by the WISC-V, in comparison to Group 2 ( $t = 2.78$ ,  $p = 0.011$ ), suggesting that children with autism possess stronger cognitive abilities than children with ADHD. The mean scores on cognitive outcomes, as evaluated by the BRIEF, did not show any notable disparity between Group 1 and Group 2 ( $t = 1.32$ ,  $p = 0.192$ ). This indicates that children with autism and children with ADHD had comparable executive functioning.

**Table 6: Analysis of Variance (ANOVA) for Differences in Parental Involvement, Collaborative Partnerships, and Cognitive Outcomes Among Different Disability Groups**

Variable	Between-Group Variability (F-value)	p-value
Parental Involvement (PIS)	3.72	<0.001
Collaborative Partnerships (CPQ)	1.89	0.021
Cognitive Outcome (WISC-V)	5.12	<0.001
Cognitive Outcome (BRIEF)	1.32	0.135

The parental involvement (PIS) scores varied significantly among different impairment groups, as evidenced by the substantial F-value of 3.72 ( $p < 0.001$ ). Post-hoc analyses indicated that parents of children diagnosed with autism exhibited notably elevated levels of parental engagement in comparison to parents of children diagnosed with ADHD and intellectual impairments. Moreover, there was a notable disparity in collaborative partnerships (CPQ) ratings among all handicap categories, as evidenced by an F-value of 1.89 ( $p = 0.021$ ). Subsequent analyses revealed that parents of children with intellectual impairments reported reduced levels of collaborative relationships in comparison to parents of children with autism and ADHD.

The cognitive results, as assessed by the WISC-V, varied significantly among different impairment groups, with a calculated F-value of 5.12 ( $p < 0.001$ ). Post-hoc analyses revealed that children diagnosed with autism demonstrated superior cognitive performance in comparison to those diagnosed with ADHD and intellectual impairments. Nevertheless, the cognitive results, as assessed by the BRIEF, did not show any notable disparity across the various impairment groups. This is supported by the insignificant F-value of 1.32 ( $p = 0.135$ ).

**Table 7: Analysis of Covariance (ANCOVA) for Differences in Parental Involvement, Collaborative Partnerships, and Cognitive Outcomes Among Different Disability Groups, Controlling for Parental Age and Socioeconomic Status**

Variable	Adjusted Mean Difference	F-value	p-value
Parental Involvement (PIS)			
Between-Group Variability	2.51	4.72	<0.001
Collaborative Partnerships (CPQ)			
Between-Group Variability	1.36	2.18	0.032
Cognitive Outcome (WISC-V)			
Between-Group Variability	4.81	6.92	<0.001
Cognitive Outcome (BRIEF)			
Between-Group Variability	0.92	1.21	0.265

After considering the age of parents and their socioeconomic position (SES), a significant difference in parental involvement (PIS) ratings was seen among different handicap groups. The adjusted mean difference of 2.51 was demonstrated, with a statistical significance of  $F = 4.72$  and  $p < 0.001$ . It is important to mention that even after taking into account parental age and socioeconomic status (SES), there are still significant differences in parental engagement across various handicap groups. Similarly, there was a significant disparity in ratings for collaborative partnerships (CPQ) among different disability categories. The adjusted mean difference between the two groups was 1.36, with a significance level of  $p = 0.032$  and an F-value of 2.18. Parental age and socioeconomic status were included in this analysis. The presence of differences in collaborative relationships across various handicap groups is apparent, even when demographic considerations are taken into account.

Even after considering parental age and socioeconomic status (SES), the disparities in cognitive outcomes, as assessed by the WISC-V, remained statistically significant across different impairment categories. The mean difference was corrected to 4.81. The F statistic was 6.92, and the p-value was less than 0.001. It is crucial to acknowledge that the variations in cognitive functioning among impairment groups may not be exclusively determined by parental age and socioeconomic status (SES). However, after considering the age of the parents and their socioeconomic status (SES), there was no significant difference in cognitive results, as measured by the BRIEF, among various handicap groups. The insignificance of the corrected mean difference of 0.92 ( $F = 1.21$ ,  $p = 0.265$ ) was apparent.

This work contributes to the current knowledge in several ways. Our research corroborates other studies highlighting the advantageous impact of parental engagement on the cognitive development of children with exceptional needs (Abdat et al., 2022; O'Connor et al., 2005). The robust association between parental

participation and cognitive functioning, even after accounting for variables like parental age and socioeconomic level, underscores the pivotal importance of parental engagement in promoting academic attainment and general welfare in children with disabilities.

In addition, our study extends current research by investigating the influence of collaborative relationships between parents and educators on cognitive outcomes. Consistent with other research conducted by Núñez et al. (2020) and Passolunghi (2011), our results demonstrate a positive correlation between robust collaborative relationships and elevated cognitive scores. This underscores the synergistic influence of parental engagement and cooperative alliances on the cognitive advancement of children.

Our research addresses several domains that have not been investigated in prior studies. Our work provides a distinctive viewpoint by presenting quantitative evidence of how parental participation and collaborative partnerships affect cognitive outcomes in children with exceptional needs. Prior studies have predominantly concentrated on the qualitative features of this subject matter, whereas our method introduces a novel perspective to the current pool of information. By employing sophisticated statistical techniques, such as ANCOVA to control for any confounding variables, we offer a comprehensive understanding of the complex connection between parental participation, collaborative relationships, and cognitive performance.

Furthermore, our work enhances prior research by examining cognitive outcomes in diverse disability cohorts, including autism, ADHD, and intellectual impairments. By doing subgroup studies and taking demographic data into account, we have discovered clear correlations between parental participation, collaborative partnerships, and cognitive results in each impairment category. A profound comprehension of this topic is essential for tailoring treatments and support services to successfully meet the distinct requirements of children with disabilities.

Furthermore, this study enhances the current knowledge by emphasizing the importance of considering demographic variables such as parental age and socioeconomic status when examining the relationship between parental involvement, collaborative partnerships, and cognitive outcomes. By carefully examining these factors in our analysis, we provide a more detailed understanding of how family traits might influence the educational achievements of children with exceptional needs (Kaskens et al., 2021; Wahyuni & Mangunsong, 2022). The results underscore the need of adopting targeted interventions that address socio-demographic disparities and encourage families from diverse backgrounds to actively engage in their child's education.

Furthermore, our study enhances the academic community by offering novel perspectives on the diverse effects of parental engagement and collaborative alliances on several cognitive domains, including as attention, memory, and executive functioning. Parental engagement was discovered to have a beneficial effect on cognitive results. Collaborative relationships were found to be a strong predictor of executive functioning skills, such as problem-solving and self-regulation, according to studies by Kefala (2023) and Shin & Konieczna (2021). The study's findings highlight the intricate structure of cognitive development in children with exceptional needs and underscore the need of targeting specific cognitive domains in educational treatments.

### **Recommendations**

According to the results of this study, there are various suggestions that may be made to improve the educational experiences and achievements of children with special needs. First and foremost, educators and politicians should give priority to efforts that focus on fostering parental engagement in their child's education. Facilitating the provision of resources and support services to enable parents to actively participate in school activities, such as parent-teacher conferences and educational workshops, may cultivate a cooperative alliance between the home and the school. Furthermore, it is crucial to customize treatments and support services to accommodate the varied requirements of families from varying socio-demographic backgrounds. This entails acknowledging the significance of characteristics like as parental age and socioeconomic position. In addition, it is important for schools and community groups to actively work towards establishing inclusive settings that promote significant cooperation and collective decision-making among all individuals involved, such as parents, educators, and community members. Through collaborative efforts, we can establish inclusive environments that foster the cognitive growth and welfare of children with special needs, guaranteeing their academic success and overall flourishing.

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